



Peer Assessment of South Wye Transport Package Findings Report

July 2020

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Executive summary

Mott MacDonald (MM) was appointed by Herefordshire Council (HC) to undertake a peer review of the Hereford Transport Package (HTP) and South Wye Transport Package (SWTP). This report concludes the findings of the review of the SWTP.

Summary of the brief

The approach to the peer review is based on the major transport scheme process as established by the Department for Transport (DfT) and set out in its Transport Analysis Guidance (TAG), particularly Stages 1 and 2 of the Transport Appraisal Process (TAP). The aim of the peer assessment is to:

1. Establish whether each package has been developed in accordance with the major transport scheme process as laid out in TAG
2. Establish whether the packages including their major road scheme components (the western bypass in the HTP and the southern link road in the SWTP) are based on a sound evidence base
3. Clarify whether the decisions to progress these packages were sound and justified in line with the recommendations of the technical work.

In addition, the review was also asked to consider how more recent/emerging national policy, such as the climate emergency, might change the preferred package options if applied retrospectively.

It also considers whether the public and stakeholders have contributed appropriately to the processes involved in developing the two packages.

Peer review

The format of the review provides a concise commentary on the documents provided, notes any issues identified by the review team and concludes with a summary of each document. The summary classifies whether the points made are:

- Looking backwards - issues identified which should be clarified or resolved. Categorised **red** where the point made is deemed to be a significant issue, **green** if the premise is sound; however, things could have been covered differently (i.e. a technical recommendation which could be reconsidered).
- Looking to the future - generally technical issues which could be revisited if the packages are progressed further, as well as environmental, climate change and net zero issues which could lead to a different vision for the package. These points are all categorised as **amber**, on the premise that they would be considered in the future before the package was progressed further.

The review had the following conclusions:

Document	Conclusion as to whether the document meets the peer review aims
SWTP Preferred Option Report	Conclusion: The level of information provided does not meet the requirements of Stage 1 of TAP. The preferred option report considers alternative link road alignments but this does not constitute an appropriate study of alternative interventions or the impact of doing nothing. Sustainable transport proposals are considered in an Appraisal Summary Table (AST) in Appendix B but are not really covered in the main body of the report. This document has in effect been superseded by the 2018 Options Assessment Report (OAR), which has been developed in line with Stage 1 of TAP. Hence whilst it may have had deficiencies in the context of TAP, the significance is minor given the OAR looks at options.
SWTP Southern Link Road planning statement	Given this is a planning rather than a transport document, this has purely been considered and included within the reviewed suite of documents to provide context for the package.
Hereford Transport Model Local Model Validation Report (LMVR)	<p>Although the LMVR is a comprehensive document, with the information providing a clear understanding of the model and its validation results, a number of queries were raised in the rapid peer review of the document. It is important to note that the LMVR was in the process of being reviewed with the DfT as part of the submission of the SWTP Full Business Case.</p> <p>The direction from HC was that a detailed technical validation of modelling was not being sought from the peer review. The assessment of the modelling was in the context of it being in general appropriate for the stage of the project and supporting the conclusions reached.</p> <p>The work is considered to be appropriate for the work to date and the technical queries raised are points which may need to be considered again if the packages are progressed in the future.</p>
SWTP Options Assessment Report (OAR)	A number of areas within the OAR could have been done differently to more robustly meet the steps of Stage 1 of TAP. However, in light of the DfT email of 16/04/19 confirming no further comments on version 11 the report, it can be concluded that Herefordshire Council have developed the package in an agreed manner and the peer review team's concern should be classed as something which could have been done differently rather than a fundamental issue. Although developed in accordance with guidance at the time environmental topics would now fall short of current Net Gain, Net Zero requirements and the Climate Emergency context and would need revisiting as part of any future updates.
SWTP Options Refinement Report (ORR)	The ORR provides a proportionate assessment of the active modes options and a robust assessment of the SLR. The DfT email of 16/04/19 confirming no further comments on version 6 the report provides further weight to the conclusion that Herefordshire Council have developed the package in an agreed manner.
SWTP Economic Appraisal Report (EAR)	A series of comments have been made in respect of the EAR and draft Economic Case. These are points of clarification which should be considered further by the scheme promoters and technical team in the future if the package is progressed further. This in no way implies the work done is incorrect, it merely is intended to provide a 'critical friend' approach to what may need to be inspected again in the future.
SWTP Economic Case	
SWTP Traffic Forecasting Report (TFR)	A series of comments have been made in respect of the TFR. These are points of clarification which should be considered further by the scheme promoters and technical team in the future if the package is progressed further. This in no way implies the work done is incorrect, it merely is intended to provide a 'critical friend' approach to what may need to be inspected again in the future.

Future requirements

Environmental issues, climate emergency and net zero policy has been considered separately to the individual documents, that formed a part of the appraisal review.

Assessment approaches and guidance are still catching up with policy. It remains possible for schemes to fully meet current assessment criteria and yet fall short of the high standards set by policy. WebTAG Unit A3 (Environmental Impacts) predominantly dates back to 2015 (Air Quality sections were updated in 2019) and is not explicitly aligned with the 100% reduction in GHG emissions by 2050, although there is a “strong preference” for Net Gain in regard to biodiversity. The latest DMRB guidance on climate change (LA 114) is from October 2019 and references the Net Zero target and take account of current climate change scenarios (UKCP18).

Since they pre-date these policy and guidance updates, and the latest UKCP18 climate scenarios, unfortunately all the SWTP documents would now fall short of current ambition in these areas. Whilst issues around air quality and noise are rightly identified, there is insufficient assessment of carbon and climate impacts compared to current requirements (although the assessment was valid at the time). These points are not intended to indicate that there was any deficiency in the work undertaken at the time, merely that more recent policy and guidance would mean that these issues should be considered again if the existing work is taken forward.

Conclusions

Aim 1 of the review is considered to be met. Whilst there remain points of technical detail which may need to be addressed in the future if the package is taken forward, it is clear that the technical work undertaken since 2018 has been prepared in accordance with the DfT Transport Appraisal Process.

Aim 2 of the review, which is to establish whether the packages including their major road scheme components (the southern link road in the SWTP) have been developed with a sound evidence base is deemed to be met. The history of the package revolves around the infrastructure needs to meet the plans of the Core Strategy. It is evident that the infrastructure is required to support the development policies contained within this document. As an example, the Hereford Enterprise Zone cannot be expanded without the bypass being delivered in full. The proposals in the form of the HTP and the SWTP have been tested and challenged in an appropriate way through technical studies, modelling and Examination in Public, to enable them to be adopted within the Local Plan.

To further support the conclusion that the first two aims have been met, Herefordshire Council has also provided evidence that DfT have reviewed the OAR and ORR, which are two of the more critical documents to inform the case for the package and describe how its appraisal has been progressed.

Aim 3 of the review is to clarify whether the decisions to progress these packages were sound and justified in line with the recommendations of the technical work. It appears that all decisions have been made in accordance with the recommendations of the technical evidence provided to support the Council papers at the time, i.e. the action taken was appropriate in the context of the advice and recommendations provided and the technical information available. There is a logical flow of decisions which recommend the continuation of the package, including where decisions have been called in for further scrutiny and additional information has been provided to justify the associated course of action. **As such Aim 3 of the review is considered to be met.**

1 Introduction

Mott MacDonald (MM) has been appointed by Herefordshire Council (HC) to undertake a peer review of the Hereford Transport Package (HTP) and South Wye Transport Package (SWTP). This report concludes the findings of the review of the South Wye Transport Package.

1.1 Summary of the brief

The approach to the peer review is based on the major transport scheme process as established by the Department for Transport (DfT) and set out in its Transport Analysis Guidance (TAG). Hence, the peer assessment of each package reports against the following elements:

- Option development and analysis
- Analysis of impacts
- Evidence informing the business case
- Decision making

The aim of the peer assessment of the South Wye Transport Package is to:

- Establish whether each package has been developed in accordance with the major transport scheme process as laid out in TAG
- Establish whether the package it's major road scheme component, the southern link road, is based on a sound evidence base
- Clarify whether the decisions to progress these packages were sound and justified in line with the recommendations of the technical work

In addition to the assessment approach as outlined above, the commission also requires a consideration of how more recent/ emerging national policy, such as the climate emergency, might change the preferred package options if applied retrospectively.

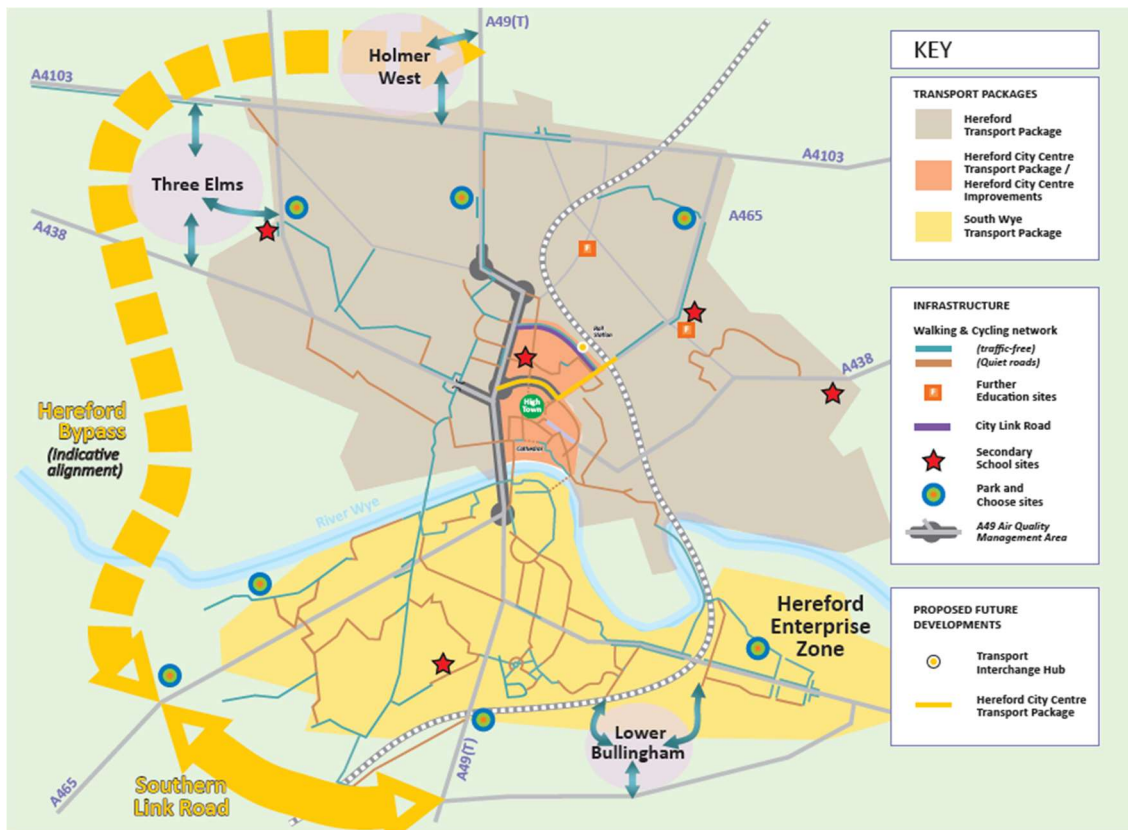
1.2 Drivers for the review

On 22 October 2019 Herefordshire Council's Cabinet Member for Infrastructure and Transport recommended a pause on all work on the Southern Link Road, and the instigation of a review of the South Wye Transport Package be undertaken to determine next steps whilst design work on the active travel measures within the package continued.

The South Wye Transport Package is being reviewed in parallel with the Hereford Transport Package. It is incumbent on the council to ensure that projects are consistent with the council's declaration of a climate emergency and will contribute to reducing the carbon output of the county whilst also addressing the transport problems of the city and supporting economic growth. Whilst the review is being carried out the council will continue to develop agreed improvements to encourage a shift of travel mode and reduce congestion.

Figure 1.1 provides a diagrammatic layout of the two transport packages.

Figure 1.1: Transport packages in Hereford



Source: Hereford Transport Package Draft SOBC (WSP, May 2019)

1.3 Project deliverables

The Peer Assessment commission covers the following stages and deliverables:

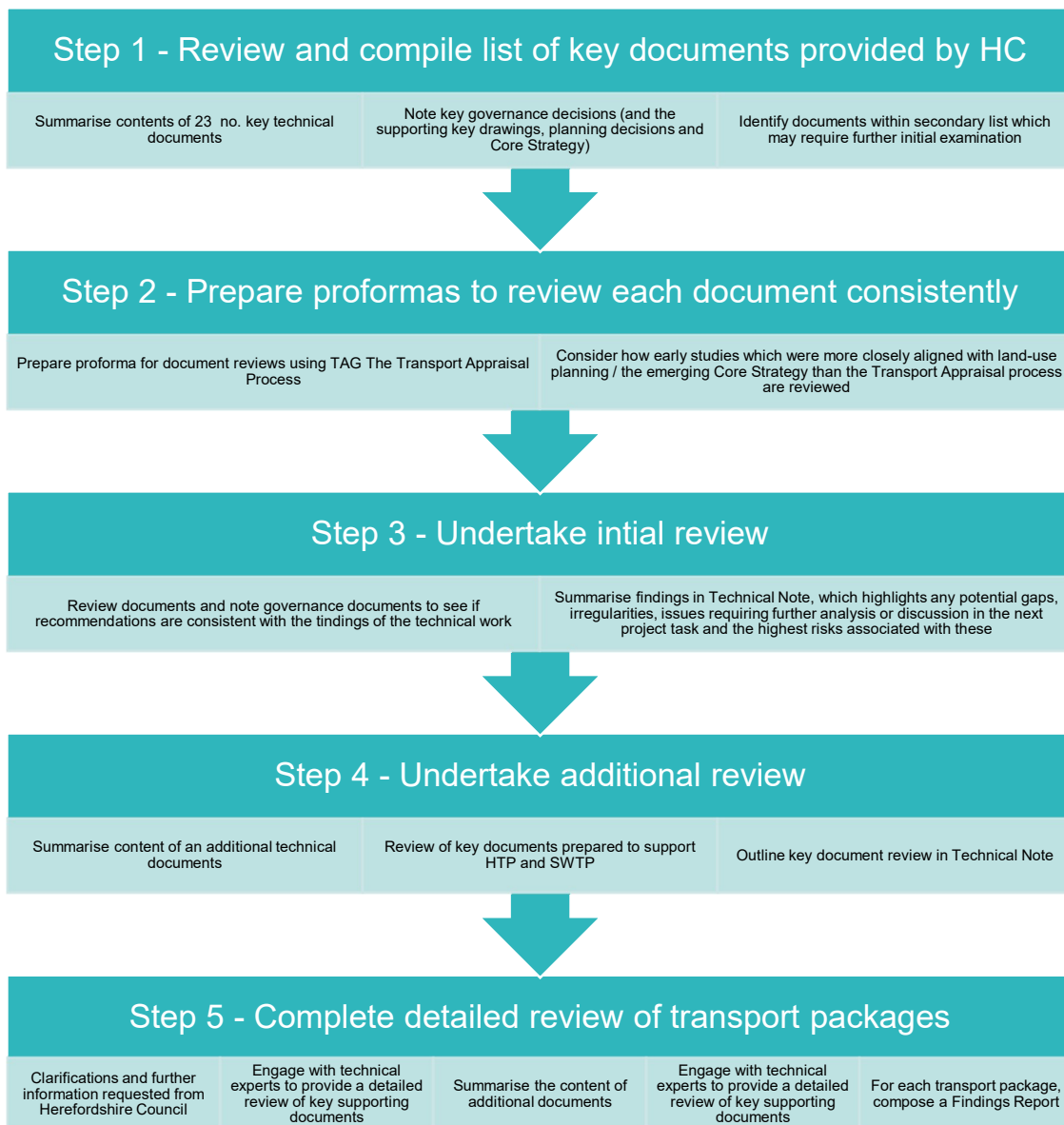
- **Task A – Project management:** The outputs from Task A are a monthly progress note and updated risk register.
- **Task B – Evidence Gathering, Initial Sift and Initial Report:** An initial evidence gathering, sifting and reporting back to the client team. To review the previous work, the constraints which have influenced optioneering were considered, rather than trying to point out small technical discrepancies. The key question is whether the preferred scheme options are correct:
 - The output from Task B has been two Technical Notes summarising the findings and explain how this initial sift will be taken forward in the main review (Task C).
 - An additional Technical Note was produced to facilitate discussions during a call between HC and their technical team for the packages, WSP, to address where further information was required following the initial reviews.
- **Task C – Full assessment and first draft reports:** A more detailed review of the key issues identified within the documentation. This has included Herefordshire Council and WSP providing further information and clarification to support the peer review. This assessment also considers implications for alternative testing/ scenarios to meet potential requirements for a climate emergency review for both schemes.

- **Task D – Reporting and presentation:** Briefing on findings to the Cabinet Member for Infrastructure and Transport.
- **Task E – Final report** update draft reports and publish final review reports for each package.
 - This report represents the Task E output for the South Wye Transport Package.

1.4 Approach to the peer review

Following the project inception meeting with Herefordshire Council on 2 April 2020, the steps have summarised in Figure 1.2 have been undertaken.

Figure 1.2: Approach to peer review



Source: Mott MacDonald

1.4.1 How has the peer review considered the information?

The peer review aims to answer three questions (as noted in Section 1.1) from an inspection of the large volume of information provided to support the package. The review provides a combination of commentary on what has been done and what might have been done differently. It is not intended to be a comprehensive technical check of every piece of information. There also needs to be an acknowledgement of things which were appropriate at the time but may no longer be appropriate in the future as a result of changing policy or guidance.

As such within the report, the review of the main documents inspected concludes with a short summary to explain if the comments made relate to:

- Looking backwards – issues identified which should be clarified or resolved.
- Looking to the future – generally points of technical detail which could be revisited if the packages are progressed further or issues related to policy and context which has progressed since the time the document was produced, for example the climate emergency.

1.5 History of the South Wye Transport Package

The history and context of the package is summarised in the Herefordshire Council Cabinet report of 22 October 2019¹, as noted below.

The need for interventions in the South Wye area and the development of the South Wye Transport Package was based on a technical assessment of the problems in the South Wye area supported by public consultation feedback. These can be summarised as:

- Constraints on economic growth particularly at the Hereford Enterprise Zone (HEZ) arising from traffic levels on existing highway network
- Car dependency for short distance trips
- Traffic congestion and journey time unreliability
- Traffic re-routing and rat running onto unsuitable roads
- Poor air quality and high noise levels (on Belmont Road)
- Severance to active travel journeys and related inactivity and consequential health impacts
- Road collisions and perception of road danger

Without any action of some sort to address these problems access to the HEZ would deteriorate, restricting existing business growth and the ability to fully develop the site. This deterioration would also limit opportunities to attract new business investment, result in continued and increased re-routing of traffic in response to congestion, resulting in additional delays and extended and unreliable journeys. Severance (the barrier effect created by busy roads) would increase as conditions for pedestrians and cyclists would become more challenging and there would be continued road safety issues. Environmental conditions would also deteriorate including increases in traffic noise and a worsening of air quality.

The South Wye Transport Package has been developed in response to these problems and an initial Strategic Outline Business Case (SOBC) which includes the Southern Link Road and a package of active travel measures was developed which can be seen by following the link provided in the footnote below.

¹ [Hereford Transport Package and South Wye Transport Package, Head of Infrastructure and Delivery](#)

The aims of the South Wye Transport Package are to:

- Reduce congestion and delay
- Enable access to developments such as the HEZ
- Reduce the growth in emissions
- Reduce traffic noise
- Reduce accidents
- Encourage physical activity.

Following the approval of the SOBC, funding of £27m was secured from the Marches Local Enterprise Partnership (LEP)² Growth Fund with a commitment of local contribution of £8m from the council's Local Transport Plan. There is an approved SWTP budget totalling £35m in the council's capital programme.

The Marches LEP grant agreement between Herefordshire Council and Shropshire Council requires the delivery of the Southern Link Road and a package of measures to improve travel and conditions for pedestrians, cyclists and public transport in the south wye area to deliver the outputs set out in the agreement. These include the delivery of 3.6 miles of new road and a package that will support new jobs and new homes. Grant funds are drawn down following submission of evidence of eligible expenditure.

1.5.1 South Wye Transport Package timeline

Figure 1.3 provides a timeline of the documents and decisions associated with the two transport packages.

The South Wye Transport Package development follows an extended period of appraisals and applications. The timeline, shown within Appendix 2³ of the 22 October 2019 Cabinet Decision, of the SWTP is as follows:

- Mid 2014 – Initial Consultation on the SWTP
- Late 2014 – Preferred route of Southern Link Road selected by cabinet
- January 2015 – Consultation prior to submission of Southern Link Road planning application
- Summer 2015 – Southern Link Road planning application submitted
- Summer 2016 – Planning permission granted for Southern Link Road
- Autumn 2016 – Consultation on potential active travel measures
- November 2017 – Cabinet authorise land acquisition and making use of compulsory purchase powers
- December 2017 – Cabinet considers feedback from active travel measures consultation and authorise development to a preferred package
- March 2018 – Compulsory purchase and side road orders made
- Late 2018 – compulsory purchase order and side roads order public inquiry
- Spring 2019 – preferred active travel measures package approved
- Spring 2019 – Secretary of State confirms Compulsory Purchase Order and Side Road Order

² Shropshire Council is the accountable body for the LEP

³ <https://councillors.herefordshire.gov.uk/documents/s50068955/Appendix%201%20-%20South%20Wye%20Transport%20Package%20Scheme%20Development.pdf>

- Summer 2019 – Commencement of delivery of Phase 1 Southern Link Road (SLR) to preserve planning consent

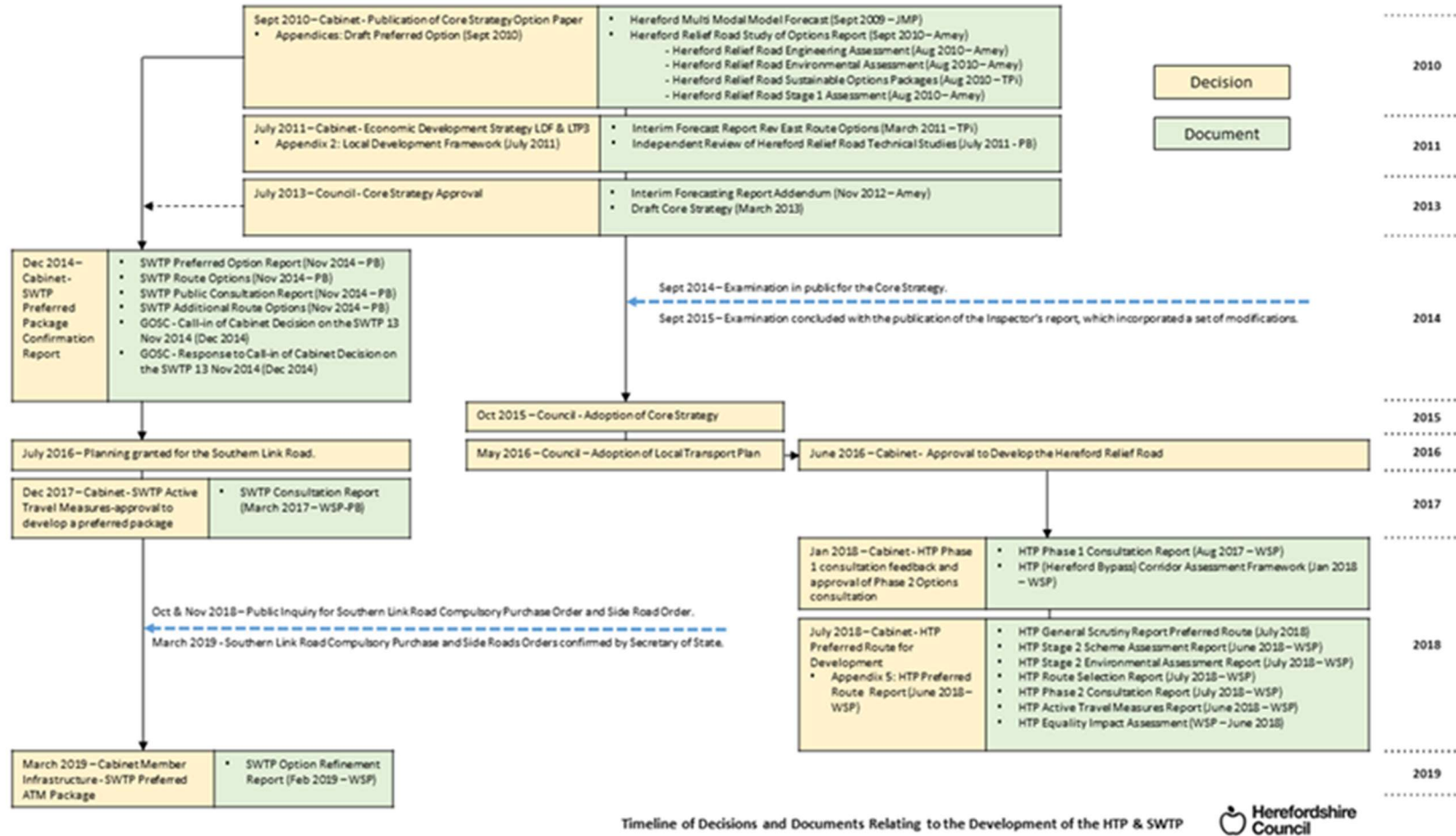
A package of initial works were undertaken to secure the planning consent, but the main works element did not commence given the 2019 decision to pause work on the SLR.

1.6 Report structure

The structure of this report is as follows:

- Section 2 – Transport Analysis Guidance and major scheme process
- Section 3 – Context of the South Wye Transport Package
- Section 4 – Peer review
- Section 5 – Future requirements
- Section 6 – Summary and conclusions

Figure 1.3: Timeline of decisions and documents relating to the HTP and SWTP



Source: Herefordshire Council

2 TAG and major scheme process

The peer review of the South Wye Transport Package has been undertaken using the following primary sources of guidance:

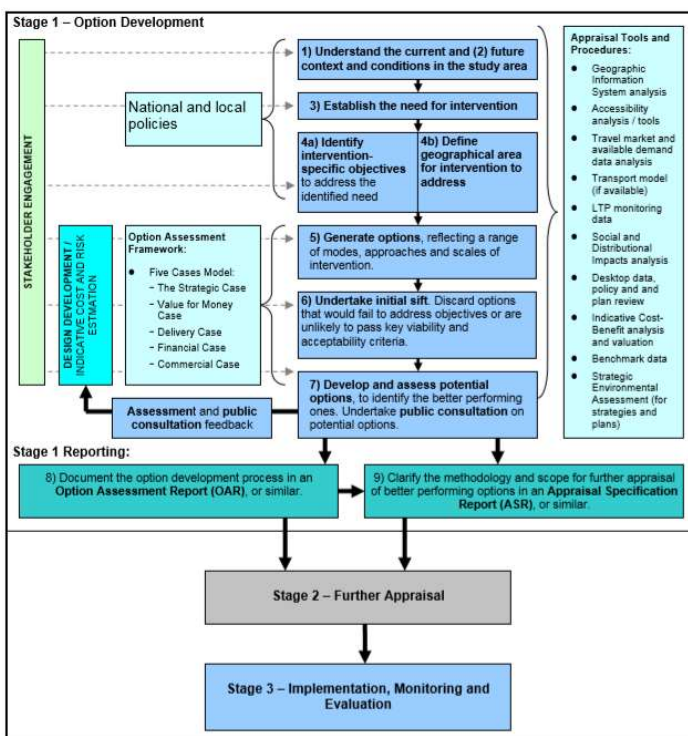
- Transport Analysis Guidance – The Transport Appraisal Process (DfT, May 2018)
- DfT Transport Business Cases (DfT, January 2013)
- Local policy (Herefordshire Council, various)

Transport Analysis Guidance (TAG) provides detail on the process of transport modelling, appraisal and the associated requirements for transport interventions. TAG involves a three-stage appraisal process as detailed within the Transport Appraisal Process (TAP).

Stage 1 Option Development of the appraisal process involves identifying the need for intervention, definition of clear set of locally developed objectives and desired outcomes and the development of options. These options are then sifted for the better performing options to be taken on to further detailed appraisal. Stage 2 Further Appraisal involves the evaluation of the better performing options and their likely impact to enable a decision as to whether to proceed with the transport intervention. Stage 3 Implementation, Monitoring and Evaluation is applicable towards the end of the development of a transport scheme.

Given the level of scheme and option development for the SWTP, this peer assessment considers Stage 1 and part of Stage 2 of the appraisal processes. Figure 2.1 indicates steps 1 to 9 in Stage 1 of the Transport Appraisal Process.

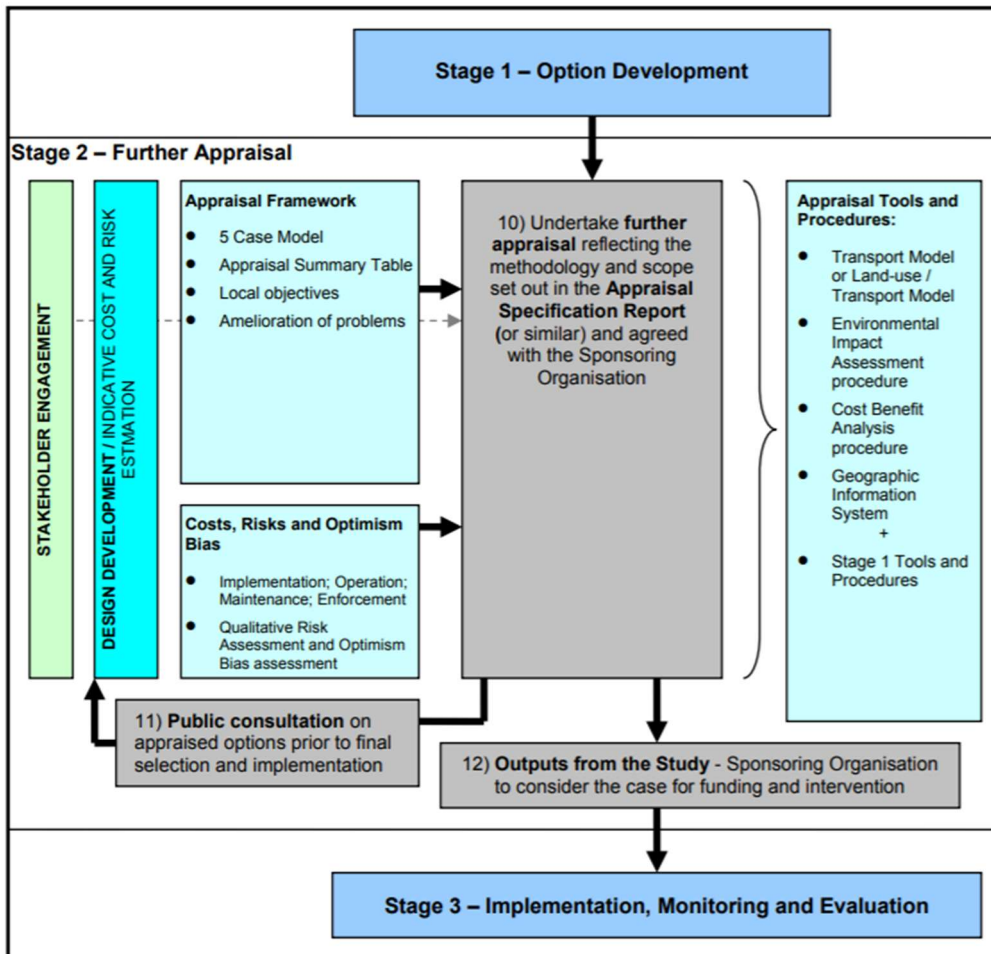
Figure 2.1: Steps in Stage 1 of the Transport Appraisal Process



Source: p4, Transport Analysis Guidance – The Transport Appraisal Process (DfT, May 2018)

Figure 2.2 indicates steps 10 to 12 in Stage 1 of the Transport Appraisal Process.

Figure 2.2: Steps in Stage 2 of the Transport Appraisal Process



Source: p21, Transport Analysis Guidance – The Transport Appraisal Process (DfT, May 2018)

To allow the peer review team to assess the South Wye Transport Package, technical and governance documents were provided to support the package by the client team. To guide this review and ensure the supporting documents cover the steps necessary to develop and appraise a major transport scheme according to TAG, the South Wye Transport Package and its supporting documents were initially assessed using the following criteria:

1. Are the current context of the package and future conditions explained?
2. Have the problem(s) the scheme will be addressing been clearly identified – including evidence of the extent of the problem(s), specific barriers / challenges, and how the scheme will overcome them (including the scale of impact)?
3. Has the impact of not progressing the package been set out, including supporting evidence? Is there adequate rationale to support why the package is needed?
4. Transport policy compliance "A transport network that supports growth enabling the provision of new jobs and houses, whilst providing the conditions for safe and active travel, which

reduces congestion and increases accessibility by less polluting and healthier forms of transport than the private car."⁴

5. Land use planning policy compliance "To improve access to services in rural areas and movement and air quality within urban areas by ensuring new developments support the provision of an accessible, integrated, safe and sustainable transport network and improved traffic management schemes"⁵.
6. Land use planning policy compliance "To strengthen Hereford's role as a focus for the county, through city centre expansion as part of wider city regeneration and through the provision of a balanced package of transport measures including park and ride, bus priority schemes and a relief road including a second river crossing"⁶.
7. Would emerging policies, particularly in response to the declared climate emergency⁷, result in different outcome/preferred option if the appraisal process were to be undertaken now?
8. Is there a set of specific, measurable, achievable, realistic, time-bound (SMART) objectives for the package to address the problem(s) identified?
9. Are the expected outcomes clear? How will it be possible to know when the objectives have been met, and what will 'success' mean?
10. Does the geographical area of impact consistent across Appraisal Steps 1, 2, 3 and 5 (i.e. existing, future and options)?
11. Do the options identified reflect a range of modes, approaches and scales of intervention? Is there evidence to support the source of these options, for example stakeholder feedback, workshops, benchmarking or research?
12. Is there a robust assessment of different package options, including the reasons for any options being discounted? Has an EAST options appraisal (or similar) been undertaken?
13. Have the options taken forward following the sift been developed with an enough level of design/specification and collecting enough evidence to be able to distinguish the relative costs, benefits and impacts of the options under consideration?
14. Have the main stakeholder groups and their contribution to the project been defined? This should include any potential conflicts between different stakeholder groups and their demands.
15. Have details of stakeholder and public consultation been provided?
16. Is there a clear description of the components of the package and how it fits with the aims and objectives of the local authority and DfT?
17. Is there an Option Assessment Report (or similar) which outlines the option development process?
18. Is there an Appraisal Specification Report (or similar) which clarifies the methodology for further appraisal of the better performing options? (Consider proportionality of appraisal)
19. Does any associated Council Governance report tally with the evidence base, decision reports and recommendations and confirmed decisions?

⁴ [Herefordshire Council Local Transport Plan 2016 - 2031 Strategy](#), page 5

⁵ Herefordshire Core Strategy 2011 – 2031, objective number 5

⁶ Herefordshire Core Strategy 2011 – 2031, objective number 7

⁷ Draft Herefordshire Council Carbon Management Plan 2020/21 – 2025/26

3 Context of the South Wye Transport Package

In summary, the South Wye Transport Package comprises a new road (the Southern Link Road) and sustainable travel measures consisting of 20mph zones, bus priority, pedestrian infrastructure and cycling infrastructure.

3.1 Introduction to the package and appraisal work undertaken by Herefordshire Council

The SWTP is based on multiple studies and a full list of documents that have been prepared to develop the SWTP are listed in Appendix A.

Historically, technical documents were prepared to inform the evidence base associated with the Local Plan Core Strategy, which identified the need for additional infrastructure to support the growth, which was anticipated to include new road and active travel measures for Hereford.

More recent business case documents have been developed for the SWTP. These have been developed in line with TAP and provide more up to date appraisal of the issues identified and performance being addressed through the package.

Given that the appraisal process has a lengthy timeline, where key policy documents are likely to have changed within the timeframe. This update in policy and appraisal requirements should be reflected throughout the technical documents, to develop the scheme in accordance with TAG. The peer review described in Section 4. provides a commentary in respect of this.

3.2 Governance documents and decisions

Throughout the development of the package papers have been taken to Council members to provide a summary of work undertaken and recommendations on how to progress the next stages of work. Aim 3 of the peer review brief is to consider whether decisions to progress the packages were sound and justified. Whilst, the review principally centres on technical work rather than Council process, in the context of this peer review aim it was also important to undertake a high level inspection of the papers supplied to Council and whether the recommendations provided and governance decisions followed the technical work which underpinned the reporting cycle. Table 3.1 lists the issue which was subject to governance and a summary of the issues and decisions made.

Table 3.1: Governance documents and decisions

Subject	Outline	Summary
16.09.2010 - Cabinet - Publication of Core Strategy Option paper	To seek approval for the publication of the Herefordshire Core Strategy: Hereford Preferred Option paper for consultation purposes.	<p>Core Strategy sets guidelines for developments across Herefordshire up to 2026. The (western) Hereford Relief Road and a package of other transport measures including walking and cycling links is considered under new infrastructure requirements.</p> <p>Background papers: - Hereford Preferred Option Paper - Place Shaping Paper Consultation January 2010</p>

Subject	Outline	Summary
28.07.2011 - Cabinet - Economic Development Strategy LDF and LTP3	<p>To consider the Economic Development Strategy for recommendation to Council on 18 November 2011;</p> <p>To agree a revised strategy for the Local Development Framework;</p> <p>To agree further consultation arrangements, including a community poll;</p> <p>To ensure that the strong linkages between the Economic Development Strategy, the Local Development Framework and the Local Transport Plan 3 are firmly embedded in each evolving strategy.</p>	<p>- Hereford Relief Road – Study of Options August 2010</p> <p>Among other things, recommends that the Cabinet approves 'the principles of the Local Development Framework Core Strategy Revised Preferred Option for the purposes of consultation, including the plan period' and notes 'the critical linkages between the adoption of the Local Transport Plan 3 and the Local Development Framework Strategy and the outcome of consultation on the Hereford Relief Road'. The three strategies (appendices) represent key mechanisms for planning and delivering growth and regeneration in Herefordshire.</p> <p>Appendices: - Economic Development Strategy - Local Development Framework - Local Transport Plan</p>
19.07.2013 - Council - Core Strategy Approval	<p>To approve the Herefordshire Local Plan - Core Strategy 2011 - 2031 (draft) for pre-submission publication in accordance with regulation 19 of the Town and Country Planning (Local Development) (England) (Amendment) Regulations 2012 (as amended).</p>	Approved and adopted in 2015
18.12.2014 - GOSC - Call-In of Cabinet Decision on the SWTP 13 Nov 2014	<p>To consider the call-in of the Cabinet decision on the South Wye Transport Package. The decision has been called in by three members of the committee: Councillors TM James, AJW Powers and A Seldon.</p>	<p>Recommends that the committee reviews Cabinet's decision 13/11/2014 on the SWTP and decides to accept the decision with no further comment or to refer the decision back to the decision maker and, if so, what recommendations to Cabinet it wishes to make. Called in for various reasons including the decision having been made contrary to the decision-making principles, improper consultation and the decision being contrary to/outside of Policy Framework (issues with OAP, route selection, consultees).</p>
02.12.2014 - GOSC - Response to Call-In of Cabinet Decision on the SWTP 13 Nov 2014	<p>To summarise the responses to the reasons for calling in the decision on a preferred package for the SLR.</p>	<p>Resolved that the decision on the preferred route option should be referred back to Cabinet, with the following recommendations:</p> <ol style="list-style-type: none"> 1. So that Cabinet can be advised by the Finance Director (and council's Section 151 Officer) as to the robustness of the approach and actuality of the cost modelling and the consequent scoring given to all routes under the options appraisal process; and 2. As Grafton Wood is now designated Ancient Woodland that SC2 is re-examined, in the light of mitigations and extra costs required, as the preferred option.

Subject	Outline	Summary
18.12.2014 - Cabinet - South Wye Transport Package Report following Call-In	To consider responses to the resolutions of General Overview & Scrutiny Committee (2 December 2014) following the call in of the decision of cabinet taken on 13 November, and confirm a preferred option for the South Wye Transport Package (SWTP) including the preferred route for a new link road from the A49 to the A465 (with a link to the B4349)	Recommends that the previous recommendations agreed by the Cabinet be reaffirmed, including that route SC2 is selected as the preferred route for the SLR. Officers were satisfied the SWTP appraisal was undertaken correctly and met national guidelines.
16.10.2015 - Council - Adoption of Core Strategy	To consider the adoption of the Herefordshire Local Plan Core Strategy 2011-2031.	Recommendation that the Council should adopt the Core Strategy as the existing unitary development plan (2007) is out of date and the development of the Core Strategy has been lengthy (since 2008) and includes the provision of a relief road to the west of Hereford.
20.05.2016 - Council - Adoption of Local Transport Plan	To adopt the Local Transport Plan (2016-2031).	The Local Transport Plan aligns with the Core Strategy and includes proposals for the Hereford relief road and transport packages, and continuing development of walking and cycling networks.
16.06.2016 - Cabinet - Approval to Develop the Hereford Relief Road	To seek approval to commence work to develop Hereford relief road (Hereford bypass) in support of proposals within the adopted Core Strategy in the context of the overall transport strategy for the city	Recommended that funding of £600,000 be approved to support works necessary to inform route selection; and to progress the Hereford bypass to route selection within the resources available. States that the bypass is key infrastructure in the LTP and enables housing and employment growth objectives if in place to connect to the SLR by 2027.
14.12.2017 - Cabinet - SWTP Active Travel Measures Progression	To consider consultation feedback and confirm next steps of delivery of the South Wye Transport Package (SWTP) Active Travel Measures (ATM)	Recommended further analysis and detailed design to a maximum value of £500,000 to confirm a preferred package of active travel measures to be delivered with the SLR and that a programme for delivery be developed. Background paper: SWTP Strategic Outline Business Case
08.03.2019 - Cabinet Member - SWTP Preferred ATM Package	The report proposes which active travel elements should be included in the business case for the scheme to ensure a robust case for funding can be made and confirms that other active travel measures will be considered for future delivery as other funding sources become available.	Decision that the preferred package of active travel measures as outlined in the Options Refinement Report be approved for inclusion in the SWTP full business case within a budget of £5.041m, to submit a final full business case to the DfT for the delivery of the SWTP and that the active travel measures not included in the Options Refinement Report be considered for future delivery.

3.3 Planning policy context of the package

The Herefordshire Core Strategy, which runs for the period between 2011 and 2031, was a key driver to indicate the need for infrastructure. This requirement led to technical work being progressed to support the Core Strategy, which in turn was developed further as part of the Hereford Transport Package and the South Wye Transport Package. The Plan was adopted in

2015 following an Examination in Public. This review is not intended to be an evaluation of the transport infrastructure aspects informing the Core Strategy; however, it does provide important context regarding the history of the two packages.

Paragraph 3.21 of the Core Strategy explains that the areas earmarked for developments are regarded as the most suitable for future development, due to their easy access to services and facilities. The Hereford Relief Road is considered important in meeting the Core Strategy housing target and ensuring that the necessary infrastructure is coordinated with the developments.

Appendix 5 – SS3: Necessary Infrastructure for Strategic Sites provides an indication of net levels of housing which can be delivered before and after infrastructure coming forward, with critical dates for the delivery of infrastructure specified. In the case of the Hereford Relief Road, circa 3,250 dwellings can be delivered, with the Southern Link and river crossing anticipated to be required by 2022. 4,800 dwellings can come forward prior to the relief road interconnecting with the A49 north and south by 2027.

The Core Strategy states that “A key element of the long-term Hereford transport strategy is the requirement for a Relief Road. This vital addition to the city’s transport network will enable the reallocation of existing highway for bus priorities and walking and cycling measures and the re-routing of the existing A49 Trunk Road (managed by the Highways England) removing longer distance traffic from the centre of the city”.

The Core Strategy transport infrastructure requirements were underpinned by a considerable technical evidence base including:

- Hereford Relief Road Study of Options (report 551497/SO/003 Issue 2A, 10/09/2010, Amey)
- Independent Review of Hereford Relief Road Technical Studies (report 3511200A-ZEV Final, 15/07/11, Parsons Brinckerhoff)
- Local Plan Core Strategy Modelling: Non-Technical Summary (June 2013, Amey)
- Hereford Transport Strategy Phasing Study: Transport Strategy Review (Issue number 4, 20/05/2014, JMP)
- Hereford Transport Strategy Phasing Study: Strategic Prioritisation (Issue number 5, 29/05/2014, JMP).

The Local Plan Core Strategy Modelling: Non-Technical Summary (paragraphs 4.2.1 and 4.2.2) concludes that:

“The results from this initial group of tests demonstrate clearly that the ‘with road’ option is the only option which can help deliver the Core Strategy and meet HA requirements for nil detriment in journey times on the A49. Nevertheless, it also identifies that whilst this option will deliver these economic objectives, and to some extent objectives regarding public transport, it makes little improvement in terms of increased health through active travel. Whilst overall CO2 emissions in the ‘With Road’ option increase due to traffic on the Western Relief road, actual levels in the city will reduce”.

In addition to the Core Strategy, The Local Transport Plan 2016 – 2031⁸, notes that “Additional highway capacity [will be required] to meet the increased demands resulting from growth, Improved access to and within the central area, Improvements to encourage more active travel within the urban area through increased supply of pedestrian, cycling and bus networks, supporting safer routes to school and improved health and access to and integration with rail”.

⁸ https://www.herefordshire.gov.uk/download/downloads/id/2912/local_transport_plan_2016-2031_strategy.pdf

Conclusion: The level of detail involved in the scheme's development has moved on since the adoption of the Core Strategy. However, it is clear that the infrastructure proposals in the Core Strategy is required to support the development policies contained within this document. The proposals in the form of the HTP and the SWTP have been tested and challenged in an appropriate way through technical studies and Examination in Public, to enable them to be adopted within the Local Plan.

The important implication for developing a TAG-compliant scheme beyond the adoption of the Core Strategy is to ensure that the case for the package (i.e. the 19 questions noted in Section 2 of this report) was reviewed. This is considered further in Section 4 of this report.

3.4 Highways England position on growth and the Hereford Enterprise Zone

Hereford Council and Highways Agency (now Highways England) worked together between 2009 – 2015⁹ to assist with the development of the transport evidence base for the Core Strategy. The key concern for Highways England is that trip generation arising from development in the Hereford Enterprise Zone (HEZ) will not exceed that agreed with Highways England until any review of capacity along the A49(T) takes place and agreement is reached.

Caps on development within the HEZ were initially set out in a Memorandum of Understanding¹⁰. Development is excluded from the Hereford Enterprise Zone Local Development Order (LDO)¹¹ once the development trip generation thresholds are reached or a re/development proposal will lead to such being exceeded. In this instance the proposal will be unable to proceed under the LDO provisions and a planning application will need to be made.

Conclusion: The HEZ cannot be expanded without exceeding the capacity of the Strategic Road Network. One of the aims of the SWTP is to improve access to the HEZ and without the road significant development of the HEZ cannot be delivered. The employment growth is constrained without the bypass being delivered in full.

⁹ Statement of Common Ground between Herefordshire County Council and Highways England, 13/01/15

¹⁰ Memorandum of Understanding dated 17/04/13, with a variation dated November 2014

¹¹ Hereford Enterprise Zone Local Development Order, October 2019

4 Peer review

This section encompasses the main body of the report and provides the findings of the peer review. A cohesive list of documents reviewed is contained in Appendix A.

The peer review has been undertaken in line with the key aims of the commission in mind, namely to:

- Establish whether each package has been developed in accordance with the major transport scheme process as laid out in TAG
- Establish whether the packages including their major road scheme components (the southern link road in the SWTP) are based on a sound evidence base
- Clarify whether the decisions to progress these packages were sound and justified in line with the recommendations of the technical work.

The review also considers responses by the Herefordshire Council team and technical team made to queries raised by the review team. The comments and recommendations made regarding each document is summarised in terms of:

- Looking backwards – issues identified which should be clarified or amended.
- Looking to the future – generally technical issues related to transport modelling and appraisal which may need to be revisited if the package are progressed further in the future. This point also considers environmental, climate change and net zero issues which could lead to a different vision for the package.

4.1 Documents reviewed

The documents supplied to Mott MacDonald by Herefordshire Council are listed and outlined in Table 4.1. This suite of documents provides a timeline of the inception of the scheme, through the identification of a need for infrastructure to support the level of development proposed in the Core Strategy, identification and sifting of preferred options, the planning application for the Southern Link Road and refinement of the options for highways and active travel within the package.

Table 4.1: Key documents provided for review

Document	Outline	Summary
February 2003 - Hereford Transport Review Local Multi-Modal Study	Study seeks to define a long-term transport strategy beyond the Local Transport Plan period, to be incorporated into the Unitary Development Plan, Regional Planning Guidance and Regional Transport Strategy.	This report has been referenced in later work and was inspected by Mott MacDonald to consider the early context of a relief road for Hereford.
September 2009 - Hereford Multi Modal Model Forecast Report (JMP)	Study to examine the implications of potential housing development up to 2026 as proposed in the Regional Spatial Strategy (RSS) and its impact on the road network within Hereford and its surrounding area.	Report on implications of potential housing development (proposed in the Regional Spatial Strategy) and its impact on the road network. Modelled scenarios assessed in terms of flow relief, stress and link speed for 2026 as a single future year (AM and PM peak hours). Model runs reveal additional housing trips have detrimental effects on Hereford highway network.

Document	Outline	Summary
		An Outer Distributor Road is forecast to provide some relief.
August 2010 – Hereford Relief Road Engineering Assessment (Amey)	Scheme Assessment in accordance with the Highways Agency Design Manual for Roads and Bridges Scheme Assessment Reporting to provide the necessary supporting information and problem identification for future analysis.	Scheme Assessment to provide supporting information and problem identification for future analysis. Builds on Stage 1 Engineering Assessment in inform appraisal (in line with WebTAG process). Assesses the engineering constraints and impacts of the proposed Hereford Relief Road options (either east or west of the city and an inner and outer option for each) with associated link roads
August 2010 - Hereford Relief Road Environmental Assessment (Amey)	Study to identify environmental and engineering advantages and disadvantages associated specifically with the introduction of a Relief Road to Hereford along the broad corridors identified.	Study to determine environmental and engineering advantages and disadvantages associated with the introduction of a Hereford relief road (eastern and western options)
August 2010 – Hereford Relief Road Engineering Sustainable Option Packages (TPi)	Study to examine the findings of implementing sustainable option packages for the Herefordshire region	Report considers sustainable option packages for Hereford and the results on the road network - with and without the relief road.
August 2010 – Hereford Relief Road Stage 1 Assessment (Amey)	Stage 1 Assessment to assess the advantages and disadvantages of the broadly defined transport infrastructure improvements from the consultation and modelling work done to date.	Assesses the advantages and disadvantages of the transport infrastructure improvements in the Hereford Core Strategy.
September 2010 – Hereford Relief Road Study of Options Report (Amey)	Considering the evidence to date on the transport options for Hereford leading towards the establishment of a core strategy.	Study to identify the engineering and environmental advantages and disadvantages associated with the Relief Road options. Follows on from Stage 1 Assessment to identify environmental and engineering issues along relief road corridors.
September 2010 – Draft Preferred Option	Follow on consultation from the place shaping consultation leading towards the establishment of a core strategy.	Paper issued for public consultation to form a Core Strategy which will establish a policy framework and the broad locations for development - to be adopted in 2011. Outlines Hereford Vision (including the provision of a relief road), with issues and opportunities, the spatial strategy and policies needed to achieve them.
March 2011 – Interim Forecast Report Rev East Route Options (TPi)	Further study considering the traffic implications of using a revised eastern route corridor with the same growth as proposed within the 'Preferred Options: Hereford' and with reduced growth.	This study considers traffic implications of using a revised eastern route corridor. Four scenarios are tested.
July 2011 – Local Development Framework	Report on progress with the Local Development Framework.	The Local Development Framework replaced the Unitary Development Plan. This plan period provided a statutory planning framework for the county to 2013.
July 2011 – Independent review of the Hereford relief road studies	High level independent review of the Hereford Relief Road technical studies and Core Strategy Preferred Option: Hereford.	Review of the Relief Road technical studies and Core Strategy Preferred Option, focusing on environmental topics (with some focus on planning

Document	Outline	Summary
		and transportation), to review preferred route of the inner western corridor.
November 2012 Interim Forecasting Report Addendum (Amey)	Report examining a revised housing and employment allocation for the proposed Local Development Framework.	Addendum to the Hereford Relief Road Study of Options Report (Amey 2010). Examines a revised housing and employment allocation for the proposed Local Development Framework.
March 2013 – Draft Core Strategy	Draft Herefordshire Local Plan - Core Strategy 2011 – 2031.	Local Plan to guide Herefordshire development for 20 years. Includes strategic and development management policy.
November 2014 – SWTP Additional Route Options (Parsons Brinckerhoff, PB)	Plan showing additional route options SC8, SC8A, SC9	1-page drawing showing additional route options SC8, SC8A, SC9
November 2014 – SWTP Preferred Options Report Final low RES (PB)	Report considering the route options for the SLR and identifying a preferred route to be included as part of the SWTP.	Builds on work by Amey on highway improvements, looking at a new southern link road, traffic max (maximum capacity for vehicles in South Wye) and sustainable transport max (reducing private car use). Report considers route options for the southern link route and identify a preferred route (out of final seven route options SC#). Engineering assessment said SC2 and SC8 performed better. Cheapest option would be SC2. All options provided regeneration and wider economic impacts and reduced congestion. All options had negative environmental impacts. Overall, SC2 scored highest making it the recommended option - but SC8 also performed well.
November 2014 – SWTP Public Consultation Report (PB)	Report summarising the approach and findings of the SWTP consultation to obtain public opinion on the options developed for the SWTP.	Public consultation in 2014 for four route options for the southern link road (SLR), SC2, SC2A, SC5, SC7. Responses from questionnaire, social media, consultations and public exhibitions. Consultation considered effective in terms of local coverage and attendance. Public have suggested alternative alignments to the Southern Link Road options - these have been reviewed in the SWTP preferred option report. Public support for improvement of traffic conditions in the South Wye area. Likely preferred route SC2, an alternative 'no road' option to the SLR second highest. Also support for an alternative bypass via a second crossing of the Wye.
November 2014 – SWTP Route Options	Plan showing route options SC2, SC2A SC5 & SC7.	1-page plan showing route options SC2, SC2A SC5 & SC7.

Document	Outline	Summary
July 2016 – Planning Permission Decision Notice 275986	Decision notice granting planning permission for application 151314 for the Southern Link Road (full suite of documents available on the Herefordshire Council Planning website).	Planning permission was granted for the Southern Link Road.
March 2017 – SWTP Active Travel Consultation Report (WSP PB)	Report summarising the approach and findings of the SWTP consultation to obtain public opinion on the possible active travel improvements.	Public consultation in 2014 helped to set the SWTP objectives. Hereford Council undertook public consultation in 2016 to determine views on possible active transport travel improvements. Reducing congestion and delay on the A465 is the most important SWTP objective to respondents. Active travel improvements are ranked in the conclusion section, with 20 mph residential areas ranked first. Consultation findings helped to inform the technical appraisal of the proposed improvements.
February 2019 – SWTP Option Refinement Report (WSP)	Documenting the refinement of the preferred SWTP route option.	SC2 was identified as the preferred route for the SLR. <ul style="list-style-type: none"> - The design assessment concluded that, out of the seven potential SLR routes, route SC2 performed best in terms of design considerations. - A technical assessment showed no significant difference between the routes.. - Public consultation found highest support for SC2. Active travel schemes underwent technical assessment as nine improvement groups, across South Wye area objectives, value for money and an assessment of potential issues in delivering the scheme. A preferred package of active travel improvements was drawn up: <ul style="list-style-type: none"> - Groups 3A, 6A and 8 achieved the highest score and could provide a coherent package. - Group 4 added due to a weight restriction condition in the planning permission for the SLR.

Once an initial inspection was undertaken of the documents which underpinned the package's development was completed, Herefordshire Council provided some additional documents for the peer review as shown in Table 4.2. This suite of documents provides more detail on the modelling and appraisal work undertaken to inform the package. It should be noted that this collection are not all as yet publicly available published documents.

Table 4.2: Modelling and appraisal documents reviewed

Document	Outline
Hereford Transport Model Local Model Validation Report	The local demand model validation report prepared for the Hereford Transport Model in 2018
SWTP Option Assessment Report (OAR)	This 2018 report details how options and packages have been assessed for SWTP
SWTP Economic Appraisal Report (EAR)	This provides the Economic Appraisal Report prepared in 2018 for SWTP
SWTP Economic Case (EC)	The Economic Case developed for the SWTP in 2019 as part of the work in progress Full Business Case
SWTP Southern Link Road Planning Statement	The 2015 Planning Statement that accompanied the SLR planning application
SWTP Traffic Forecasting Report (TFR)	A traffic forecasting report prepared in 2018 for SWTP

4.2 Initial review

At the start of the project Mott MacDonald undertook an initial rapid review of the documents listed in Table 4.1 in line with the process described in Section 1.4. The findings of this work were described in Technical Note 417997-MMD-MAN-XX-TN-TA-0005 (available on request).

An initial review of the second set of documents shown in Table 4.2 was also carried out and this is summarised in Technical Note 417997-MMD-MAN-XX-TN-TA-0007 (available on request).

These initial inspections allowed the peer review team to familiarise themselves with the package and the work undertaken to develop the scheme. As part of the initial review, discussions were held with Herefordshire Council and WSP in order to attain clarifications and additional data. A tracker showing the key comments made and the responses received is provided in Appendix B.

4.3 Peer review

Following this initial review and verification with the client and technical teams for the package, more inspection was undertaken of the documents considered to be those pivotal to the case for and appraisal of the scheme over time. The peer review has centred on the following:

- SWTP Preferred Option Report (3512983A-HHR Version 6.0, November 2014)
- SWTP Southern Link Road Planning Statement (3512983L-HHR Final, April 2015)
- Hereford Transport Model Local Model Validation Report (70029880-571\1\3 3rd Draft, September 2017)
- SWTP Options Assessment Report (3512983BP Revision 11, March 2019)
- SWTP Options Refinement Report (70089880 Revision 6, February 2019)
- SWTP Economic Appraisal Report (3512983BP-WSP-DEV-001-EAR03 Rev 2, February 2019)
- SWTP Economic Case (no report reference, May 2019) (part of draft Full Business Case)
- SWTP Traffic Forecasting Report (3512983BP-WSP-DEV-001-TFR02 Rev 1, December 2018).

Each document has been reviewed (where appropriate) by key disciplines including transport planning, appraisal and economics; transport modelling; environment; climate change and carbon.

The format of the review provides a concise commentary on the document provided, notes any issues identified by the review team and concludes with a summary of each document. The summary classifies whether the points made are:

- Looking backwards – issues identified which should be clarified or amended. Categorised **red** where the point made is deemed to be a significant issue, **green** if the premise is sound however things could have been covered differently (i.e. a technical recommendation which could be reconsidered).
- Looking to the future – generally technical issues which could be revisited if the packages are progressed further, as well as environmental, climate change and net zero issues which could lead to a different vision for the package. These points are all categorised as **amber**, on the premise that these points they would be considered in the future before the package was progressed further.

4.3.1 SWTP Preferred Option Report

The report contains a significant amount of technical work to review various link road alignments. The report states that the appraisal has used *“the principles of a Stage 1 level of appraisal outlined in the Department for Transport guidance WebTAG to identify a preferred route for the SLR”*. Reference is made to objectives within the draft Core Strategy (at this point the Core Strategy had not yet been adopted) relating to development, economic prosperity and environmental quality.

SWTP scheme objectives are identified as being:

- Reduce congestion and delay
- Enable access, particularly to developments such as the HEZ
- Reduce the growth in emissions such as CO₂, NO_x and PM₁₀s
- Reduce traffic noise
- Encourage physical activity.

These objectives are not SMART¹², however.

Conclusions are provided in terms of engineering assessment, traffic/ safety and economic assessment, environmental assessment, social assessment.

- Engineering conclusion: SC2 cheapest and best performing
- Traffic conclusion: SC7 has reduced speed limit so best accident reduction potential but other conclusions are general covering all options
- Environmental conclusion: SC7 least worst, SC5 worst
- Social conclusion: SC2 and SC2A slightly best performing

Overall conclusions: An Appraisal Summary Table comparing the different SLR Options is at Appendix A. Option SC2 has the highest overall AST score of 1.5. Option SC5 and SC7 have the lowest scores of -2.5 and -1 respectively.

The appraisal purely considers the link road options, not the supporting sustainable transport measures. It is not clear whether the findings constitute 'success' or the best out of the options examined.

Conclusion: The level of information provided does not meet the requirements of Stage 1 of TAP. The preferred option report considers alternative link road alignments but this does not constitute an appropriate study of alternative interventions or the impact of doing nothing.

¹² Specific, Measurable, Attainable, Relevant, Time-bound

Sustainable transport proposals are considered in an Appraisal Summary Table (AST) in Appendix B but are not really covered in the main body of the report. This document has in effect been superseded by the 2018 Options Appraisal Report (OAR), which has been developed in line with Stage 1 of TAP. Hence whilst it may have had deficiencies in the context of TAP, the significance is minor given the OAR looks at options.

4.3.2 SWTP Southern Link Road planning statement

Noting that Hereford's transport network is already constrained and subject to congestion/ delay the Core Strategy has identified growth proposals which require transport interventions to allow their delivery. They also require other infrastructure such as water/ sewage and power supply. There is no ideal solution to growth in Herefordshire and hence the planning policy was subject to a settlement review to determine optimum allocation of housing/employment growth to the city/market towns and rural areas. This considered reducing need to travel (amongst other planning issues such as environmental impacts) which necessarily allocated largest quantum of growth to Hereford, noting the proximity to transport networks and population. Given land use space is limited within the centre of Hereford, the balance of housing and employment provision is allocated at the urban fringes such as the three Sustainable Urban Extensions and the Hereford Enterprise Zone. Space is also being provided in the centre through the regeneration of the land to the north of the city centre and this includes provision for housing and commercial development. The SWTP package was developed in that context.

It is noted that the HEZ is subject to growth in advance of the delivery of the SLR. However, this is controlled within the context of a quantum agreed with Highways England which has not yet been exceeded. It is also in the context of active travel schemes being brought forward in advance of the SWTP. Examples include the cycle bridge connecting the HEZ with the north of the city, additional bus services and a dedicated Travel Plan.

Conclusion: Given this is a planning rather than a transport document, this has purely been considered and included within the reviewed suite of documents to provide context for the package.

4.3.3 Hereford Transport Model Local Model Validation Report (LMVR)

Although the LMVR is a comprehensive document, with the information providing a clear understanding of the model and its validation results, several queries were raised in the rapid peer review of the document. It is important to note that the LMVR was in the process of being reviewed with the DfT as part of the submission of the SWTP Full Business Case.

The direction from HC was that a detailed technical validation of modelling was not being sought from the peer review. The assessment of the modelling was in the context of it being in general appropriate for the stage of the project and supporting the conclusions reached.

The work is considered to be appropriate for the work to date and the technical queries raised are points which may need to be considered again if the packages are progressed in the future.

4.3.4 SWTP Option Assessment Report (OAR)

4.3.4.1 Transport appraisal

The OAR has been produced in accordance within the TAG Transport Appraisal Process (TAP) and provides a good level of detail on the problems identified, the scheme objectives and long list of options in line with TAP steps 1-8 (Figure 2.1). The report sifts to two preferred options.

It should be noted that DfT have been consulted in the development of the OAR and ORR for SWTP. The DfT confirmed to Herefordshire Council in April 2019 that they had no further comments on the OAR and ORR.

Step 1 Understand the current context and conditions in the study area

The OAR contains a thorough review of (then current) local, regional and national policies which have implications on the study and selection of options to resolve issues in Hereford. There is a comprehensive assessment of baseline transport conditions for all modes including active travel and public transport. Current problems identified consist of:

- Traffic congestion and journey time unreliability
- Constraints on economic growth arising from traffic levels
- Car dependency, understood through a range of psychological factors governing car use
- Relative cost and availability of city centre car parking
- Traffic re-routing onto unsuitable roads
- Severance to active travel journeys
- Road collisions and perception of road danger;
- Poor air quality and high noise levels affecting key receptors and
- Inactivity and consequential health impacts.

Geographically problems manifest themselves in terms of:

- Traffic congestion on the A465
- Delays at the A49/A465 signalised junction (Asda roundabout)
- Traffic congestion on the A49(T)
- Volume of heavy goods vehicles
- Poor walking/ cycling infrastructure .

The OAR identifies that *“In general, cheaper and easier parking at a destination is associated with more driving, whereas parking restraint is associated with less driving. Although, in many cases, the availability of alternative parking and other travel options are important factors... there is a substantial amount of off-street parking in the city centre, with 3,700 spaces across 23 car parks”*.

Conclusion: It would be helpful if there was a clearer indication as to which trips are seen to be the issue i.e. through trips, Hereford internal trips or external-internal trips. This would aid weight to what the issues are that the package is trying to resolve (i.e. strengthens the case for an intervention) but it would not be justified to revisit the OAR on the basis of this point alone.

Step 2 Understand future context and conditions in the study area

The adopted Core Strategy is used as the basis for projected growth in housing and employment through Hereford in future years. Changes to the transport system in future years include the Hereford City Centre Package, the SWTP and the Hereford High Town Package.

The future performance of the network has been predicted using the Hereford Highway Assignment Model. The additional growth in trips generated by development is shown to result in increases in total network queue and delay, whilst journey times will go up on routes in the AM, interpeak and PM peaks compared to the base scenario.

Conclusion: No action required. This is commentary to explain how the package meets Step 2 of TAP.

Step 3 Establish the need for intervention

The need for an intervention is linked to the infrastructure requirements identified within the Core Strategy. Paragraph of the OAR 3.5.3 states that “...the previous modelling of the performance of key routes and junctions in Hereford forecasts an overall deterioration in the levels of service, providing a clear indication that the current highway network is unable to accommodate the level of growth anticipated by the Core Strategy”.

Conclusion: No action required. This is commentary to explain how the package meets Step 3.

Step 4 Identify intervention-specific objectives / Define geographical area for intervention to address

A logic map is provided to show the connections between the underlying causes of issues and the problems to the desired outputs. Objectives then appear to have formed from those desired outputs.

Strategic scheme targets are:

- ST1: Enable the delivery of 6,500 new homes and 15ha of new employment land in Hereford by 2032
- ST2: Increase the levels of physical activity through greater uptake of active travel and
- ST3: Reduce levels of monitored air pollutants and transport-related noise levels.

South Wye package indicators (of success) are defined as:

- AI1: Reduce peak hour journey times to and from the HEZ from rural areas South-West of Hereford relative to baseline levels
- AI2: Increase active travel mode share for journeys to work to and from the South Wye area relative to baseline levels
- AI3: Increase active travel mode share for peak period journeys to and from the South Wye area relative to baseline levels
- AI4: Reduce the incidence of serious and fatal Personal Injury Collisions in the South Wye area relative to baseline levels
- AI5: Reduce levels of traffic-related emissions of CO, CO2 and NOx at monitoring sites in comparison with baseline levels and
- AI6: Reduce levels of noise attributable to traffic sources as measured at key receptors in the South Wye area in comparison with baseline levels.

The geographic scope for the area of impact has been given as the area to the south of the River Wye and extends to rural areas to the immediate south of Hereford. It includes key radial routes, including the A465 and A49(T).

The OAR study area excludes the city centre, areas north of the River Wye and origins / destinations beyond the city which would require the assessment of transport impact to extend further.

Conclusion: No action required. This is commentary to explain how the package meets Step 4.

Step 5 Generate options, reflecting a range of modes, approaches and scales of intervention

A range of options have been considered, partially taken from previous studies but there is also evidence of a high level of stakeholder engagement to inform this process. 13 broad options were generated (Table 19) and these were split between capital and revenue expenditure

options. Paragraph 7.1 notes that “options to solve the identified problems which extend outside of the study area are outside of the scope of this assessment. As an example, options considering new river crossings, are excluded”.

Capital expenditure options	Revenue expenditure options
<ul style="list-style-type: none"> ■ 20mph zones ■ Bus Priority Improvements ■ Cycle Infrastructure Improvements ■ Highway junction capacity improvements ■ Light Rail Infrastructure ■ Online highway improvements ■ Pedestrian Infrastructure Improvements ■ Rotherwas railway station ■ Southern Link Road ■ Strategic Park and Ride Infrastructure 	<ul style="list-style-type: none"> ■ Behavioural Change Programme ■ Parking charges and locations ■ Travel Planning Programme

Conclusion: No action required. This is commentary to explain how the package meets Step 5.

Step 6 Undertake initial sift. Discard options that would fail to address objectives or are unlikely to pass key viability and acceptability criteria

Paragraph 7.2.2 states that “These options cover capital expenditure (infrastructure) and revenue expenditure (investing in ongoing travel planning programmes or bus services, for example) as a combination of revenue and capital expenditure are likely to form part of the wider strategy to address the problems in the South Wye area. However, the major transport scheme funding (which requires the submission of a Transport Business Case, and which the OAR forms a component part) is for capital expenditure. On that basis only capital expenditure options were considered further through the assessment process”.

Whilst the funding constraint is understood, given Step 1 identified the availability of parking being a major factor in car trips, it is unfortunate that parking charges and location interventions have been discounted immediately, particularly as Table 20 (Summary of impacts by option) shows behavioural change programme to have a positive impact against 11 of 12 impacts, the most of any option in the table. Similarly, parking charges and locations, as well as travel planning programme both have similar numbers of ticks to the capital options in this table. For this OAR to be considered robust it would have been preferable to score the revenue interventions as well to demonstrate that the capital interventions perform as well as revenue options unless there are other clear reasons not to.

EAST was used to appraise the options and conduct initial sift from the long-list. Options were scored on 7-point scale both against objectives, and other assessment criteria. The objectives were assessed under strategic, economic, managerial, financial cases and “additional decision-making criteria” (Table 21).

The initial sifting process removed three options: Strategic park and ride infrastructure, Rotherwas railway station and light rail infrastructure primarily on the high anticipated costs associated with these interventions. The other seven options were collectively grouped. The active travel measures were collectively grouped and assessed as one package. The other packages are assessed as individual schemes.

Conclusion: Responses by HC and WSP to the draft peer report have reiterated that revenue options have been discounted as per paragraph 7.2.2. It is understood why this position has been taken and TAP paragraph 2.9.1 notes that “At the end of Step 5 ... An initial sift should ... be undertaken to identify any ‘showstoppers’ which are likely to prevent an option progressing at a subsequent stage in the process”, however we do feel it would be remiss for the review team

not to note a concern that there are options which could address in part some of the problems identified, which have been discounted without any further examination. Without this how can we be sure of the contribution these other options would have made?

Step 7 Develop and assess potential options, to identify the better performing ones. Undertake public consultation on potential options

The remaining 7 options were then placed into four packages.

Link Road between A49(T) and A465	Active Travel Measures	Online highway improvements	Junction capacity improvements
<ul style="list-style-type: none"> Southern Link Road 	<ul style="list-style-type: none"> 20mph zones Bus priority Pedestrian infrastructure Cycling infrastructure 	<ul style="list-style-type: none"> Increasing capacity by making best use of existing road infrastructure along A465 and A49(T). 	<ul style="list-style-type: none"> Increasing capacity of existing congested junctions on A49(T) and A465.

As part of the initial peer review a query was raised as to how the schemes had been grouped into four packages, given the sparse explanation of how these had been decided on page 101 of the OAR. WSP advised in June 2020 that “Given the scale and complementarity/competitive nature of the different options, it was decided to retain three of the options as distinct ‘option packages’ in their own right. However, given the scale of the other four options and their synergy across the area of ‘active travel’ it was decided to combine them into a single active travel option package (Table 23). This led to four option packages being considered further, as described in Chapter 9 of the OAR”. This response doesn’t resolve the initial question as to how the option packages were formed, as it refers back to the OAR.

Scoring of the four packages took place against strategic, economic, value for money and financial criteria, in line with the 7-point TAG scale (Large beneficial, Moderate beneficial, Slight beneficial, Neutral, Slight adverse, Moderate adverse, Large adverse). The scoring concluded that the online highway improvement and the junction capacity improvement options did not perform well, primarily relating to scheme objectives and in the case of the online highway improvements environmental impacts. The junction capacity improvements had a neutral score against many of the assessment criteria, although was estimated as the joint lowest cost intervention alongside the active travel measures package.

High level BCRs for active travel measures, online highway improvements and junction capacity improvements were 1.5 indicating medium Value for Money, whereas the link road was calculated at 2.0, indicating high Value for Money.

Online highway improvements and junction capacity improvements were discounted at this point. Table 27 considers to two remaining packages and assesses a combined package of SLR plus active travel. The issue with doing this is that it results in only a single package being taken forward.

In response to the draft peer review report WSP stated that “The rationale is set out (albeit briefly) in para 8.2.12: ‘As illustrated in Table 21, several options were not considered to achieve the desired outcomes in isolation. Therefore, in line with best practice guidance, consideration was given to ways in which these options could be packaged together. The aim was to create a sensible number of distinct and feasible option packages for further development and assessment.’ TAP does not give guidance on how this should be carried out.” It is accepted that TAP is not explicit in how packaging should be explained.

Conclusion: In summary, we conclude that there is only a short explanation as to how and why the remaining options have been combined into four preferred packages. More explanation

would aid clarity for the reader, but it would not be justified to revisit the OAR on the basis of this point alone.

Step 8 Produce Option Assessment Report, or similar

The outcome of the OAR process in Step 8 of TAP is to identify the better performing options (including a low-cost option) for progressing to Stage 2 of the appraisal process. In response to the draft peer review WSP noted that *“Section 9.3 outlines that, of the four options packages taken forward, 2 of them (online highway improvement and the junction capacity improvement options) did not perform well against the assessment areas. It goes on to say: ‘The Option Assessment Framework also demonstrated that the Southern Link Road and Active Travel Measures would contribute to the delivery of the area package objectives, with each performing better against different assessment areas. It was therefore proposed that these options be combined to deliver a package (Southern Link Road + Active Travel Measures) which performs well across the majority of the assessment areas.’ In essence the two better performing options were taken forward, but in combination, as the identified best means of achieving the range of objectives”*.

Subsequent to Stage 1 of TAP, Stage 2 (paragraph 3.1.2) requires *“a small number of better performing options in order to obtain sufficient information to enable decision-makers to make a rational and auditable decision about whether or not to proceed with intervention”*.

WSP referred to paragraph 9.3.5 which states that *“it was considered that the Online Highway Improvements or the Junction Capacity Improvement packages referred to in Table 23 had the potential to form a low-cost solution to compare with the preferred package. These were two of the four options assessed using the Option Assessment Framework. However, the Option Assessment Framework demonstrated that these packages would not sufficiently contribute to the achievement of the area package objectives. Therefore, in accordance with Step 7, these weaker performing packages were not taken forward and a low-cost alternative to the preferred package was not subjected to further assessment”*.

The peer review team’s view of this guidance is that it should be a low-cost **alternative** option.

Conclusion: The concern with the approach taken to combine the strongest performing interventions, namely the SLR and active travel measures, at the end of Stage 1 is that it could appear that a preferred package has been settled at this point. It is fully acknowledged that this remaining option needs to be (and is) subject to further appraisal in Stage 2, however typically other options would remain and be subject to further appraisal in Stage 2 *“to produce evidence sufficiently robust to support the business case¹³”*. However, in light of the DfT email of 16/04/19 confirming that they had no further comments on version 11 the report, it can be concluded that Herefordshire Council have developed the package in an agreed manner and the peer review team’s concern should be classed as something which could have been done differently rather than a fundamental issue.

4.3.4.2 Environment, climate change and carbon

The OAR identifies numerous key transport-related environmental drivers in national, regional and local policy, including the switch to sustainable modes of transport to reduce carbon emissions, along with overall reductions in vehicle traffic and freight. Air Quality and transport related noise impacts on the South Wye area are the key environmental topics of focus. As would be expected, the environmental issues are framed within the desire for improved transport outcomes and of the three strategic objectives, environmental issues are focused on

¹³ Page 5, Transport Analysis Guidance for the Technical Project Manager, May 2018

reducing the transport impacts of air quality and noise, which cascades into the package objectives and targets. Broader policy objectives to protect the environment and tackle climate change focus on increasing active travel mode share. A wider set of environmental topics are assessed for the four option packages, and for the preferred Southern Link Road and active travel measures package, adverse effects are predicted for noise, air quality, greenhouse gases, landscape, historic environment, biodiversity and the water environment, and a slight beneficial effect on townscape.

Conclusion: Overall, the assessment is in accordance with the guidance at the time. Should the package be progressed further, the adverse effects predicted on various environmental topics fall short of current Net Gain, Net Zero requirements and the Climate Emergency context and would need revisiting as a result.

4.3.4.3 OAR overall conclusions

Several areas within the OAR could have been done differently to more robustly meet the steps of Stage 1 of the Transport Appraisal process. However, in light of the DfT email of 16/04/19 confirming no further comments on version 11 the report, it can be concluded that Herefordshire Council have developed the package in an agreed manner and the peer review team's concern should be classed as something which could have been done differently rather than a fundamental issue. Although developed in accordance with guidance at the time environmental topics would now fall short of current Net Gain, Net Zero requirements and the Climate Emergency context and would need revisiting as part of any future updates.

4.3.5 SWTP Options Refinement Report

Step 9 of the Transport Appraisal Process is to Clarify Modelling and Appraisal Methodology and paragraph 2.12.1 states that *“where proposals are to be taken forward for further appraisal, analysts should clarify the methodology and scope of further appraisal, and agree this with the Sponsoring Organisation, prior to undertaking the work. The methodology should be documented in an Appraisal Specification Report (ASR), or similar”*. No ASR has been provided. In July 2020 HC / WSP advised that there was an ASR for SWTP which was discussed with the DfT but not published. The issues raised and discussed during this time then migrated into the LMVR, i.e. rather than writing about what it was planned to do (specification), the team wrote about what had been done and why (validation). Updating and publication of the ASR may be something which could be considered in the future if the package is taken forward.

The Option Refinement Report (ORR) is the next report available for the scheme within the appraisal process. This was prepared to document the refinement of the preferred option, as recommended by the OAR. The preferred option is a package combining a Southern Link Road with active travel measures.

Chapters 2 to 4 consider route development, preferred route selection and refinement of the preferred route for the SLR respectively. Chapter 5 explains scheme generation, sifting, grouping and identification of the preferred active travel measures package. The report also provides a summary of public consultation taken from the SWTP Report on Consultation (November 2014) in the case of the SLR and SWTP Active Travel Consultation Report (March 2017) for the active travel measures package.

The two package elements are considered separately, which is consistent with the OAR. The Smarter Choices work takes a proportionate approach based upon EAST¹⁴. The SLR elements are assessed in a what appears to be a robust manner, albeit it relies upon reports and

¹⁴ Early Assessment and Sifting Tool, DfT

consultation generally dating back to 2014, which would have been 5 years old by the time the ORR was produced.

Conclusion: The ORR provides a proportionate assessment of the active modes options and a robust assessment of the SLR. The DfT email of 16/04/19 confirming no further comments of version 6 the report provides further weight to the conclusion that Herefordshire Council have developed the package in an agreed manner.

4.3.6 SWTP Economic Appraisal Report and Economic Case

In reviewing these documents, several detailed technical comments relating to traffic forecasting and modelling were made. In order to aid the flow of the report and to answer the three key questions in the brief for the peer review, the detailed points are provided as Appendix C.

Conclusion: A series of comments have been made in respect of the EAR and draft Economic Case. These are points of clarification which should be considered further by the scheme promoters and technical team in the future if the package is progressed further. This in no way implies the work done is incorrect, it merely is intended to provide a 'critical friend' approach to what may need to be inspected again in the future.

4.3.7 SWTP Traffic Forecasting Report (TFR)

The Traffic Forecasting Report models two different scenarios, one with the committed highway schemes, and one with the additional South Wye Transport Package measures.

- The Southern Link Road (SLR), connecting A49/B4399 Roundabout to A465
- Active travel measures

The primary purpose of the highway model is to assess the environmental and economic benefits of the SWTP.

The modelled scenarios have included assumptions based on the opening of the SLR and combined with the bypass opening year. The transport packages have been separated, to allow the Hereford Transport Package to be assessed independently.

In reviewing this document, a number of detailed technical comments relating to traffic forecasting and modelling were made. In order to aid the flow of the report and to answer the three key questions in the brief for the peer review, the detailed points are provided as Appendix C.

Conclusion: A series of comments have been made in respect of the TFR. These are points of clarification which should be considered further by the scheme promoters and technical team in the future if the package is progressed further. This in no way implies the work done is incorrect, it merely is intended to provide a 'critical friend' approach to what may need to be inspected again in the future.

4.4 Summary of findings

Table 4.3 provides a summary of the peer review team's conclusions in respect of how the key documents to support the development of the package meet the three aims of the review. They are categorised in line with the RAG criteria explained at the start of this Section.

Table 4.3: Summary of findings by document

Document	Conclusion as to whether the document meets the peer review aims
SWTP Preferred Option Report	Conclusion: The level of information provided does not meet the requirements of Stage 1 of TAP. The preferred option report considers alternative link road alignments but this does not constitute an appropriate study of alternative interventions or the impact of doing nothing. Sustainable transport proposals are considered in an Appraisal Summary Table (AST) in Appendix B but are not really covered in the main body of the report. This document has in effect been superseded by the 2018 Options Appraisal Report, which has been developed in line with Stage 1 of TAP. Hence whilst it may have had deficiencies in the context of TAP, the significance is minor given the OAR looks at options.
SWTP Southern Link Road planning statement	Given this is a planning rather than a transport document, this has purely been considered and included within the reviewed suite of documents to provide context for the package.
Hereford Transport Model Local Model Validation Report	<p>Although the LMVR is a comprehensive document, with the information providing a clear understanding of the model and its validation results, a number of queries were raised in the rapid peer review of the document. It is important to note that the LMVR was in the process of being reviewed with the DfT as part of the submission of the SWTP Full Business Case.</p> <p>The direction from HC was that a detailed technical validation of modelling was not being sought from the peer review. The assessment of the modelling was in the context of it being in general appropriate for the stage of the project and supporting the conclusions reached.</p> <p>The work is considered to be appropriate for the work to date and the technical queries raised are points which may need to be considered again if the packages are progressed in the future.</p>
SWTP Options Assessment Report	A number of areas within the OAR could have been done differently to more robustly meet the steps of Stage 1 of the Transport Appraisal process. However, in light of the DfT email of 16/04/19 confirming no further comments on version 11 the report, it can be concluded that Herefordshire Council have developed the package in an agreed manner and the peer review team's concern should be classed as something which could have been done differently rather than a fundamental issue. Although developed in accordance with guidance at the time environmental topics would now fall short of current Net Gain, Net Zero requirements and the Climate Emergency context and would need revisiting as part of any future updates
SWTP Options Refinement Report	The ORR provides a proportionate assessment of the active modes options and a robust assessment of the SLR. The DfT email of 16/04/19 confirming no further comments on version 6 the report provides further weight to the conclusion that Herefordshire Council have developed the package in an agreed manner.
SWTP Economic Appraisal Report	A series of comments have been made in respect of the EAR and draft Economic Case. These are points of clarification which should be considered further by the scheme promoters and technical team in the future if the package is progressed further. This is no way implies the work done is incorrect, it merely is intended to provide a 'critical friend' approach to what may need to be inspected again in the future.
SWTP Economic Case	
SWTP Traffic Forecasting Report	A series of comments have been made in respect of the TFR. These are points of clarification which should be considered further by the scheme promoters and technical team in the future if the package is progressed further. This is no way implies the work done is incorrect, it merely is intended to provide a 'critical friend' approach to what may need to be inspected again in the future.

Notes:

- Aim 1 In accordance with TAG
- Aim 2 Sound evidence base
- Aim 3 Decisions sound
- Red = looking backwards – issue which should be clarified,
- Green = looking backwards – sound but issue could have been done differently.
- Amber = looking forwards = issue to be considered if package progressed further in the future
- Black = not applicable

5 Future requirements

Environmental issues, climate emergency and net zero policy has been considered separately to the individual documents that formed a part of the appraisal review. This section explains the relative overarching policies and how these have changed and adapted throughout the appraisal process. The policies used at the start of the process, albeit correct at the time of the SWTP's earlier development, are now out of date.

A fundamental shift in Government policy and ambition in the area of the environment, climate and carbon has occurred since the SWTP assessment documents were produced. The United Nation's Paris Agreement called on all countries to engage in climate action to maintain the global average temperature increase below 2°C and aim to limit it to below 1.5°C compared to pre-industrial levels. In 2018, the Intergovernmental Panel on Climate Change (IPCC) Special Report concluded limiting global warming to 1.5°C would require "unprecedented" and "deep emissions reductions in all sectors" and a decrease in global CO₂ emissions by about 45% by 2030 compared to 2010, reaching net zero by 2050. Central UK Government declared a Climate Emergency in May 2019, followed in June 2019 with the target for 100% reduction in GHG emissions by 2050 (Net Zero). This materially affects investment decisions, especially in the area of transport infrastructure. Updates to the NPPF in 2018 embedded the principle of environmental "net gain" in relation to new development. Taken together, these provide grounds for challenge to any scheme which does not demonstrably provide environmental benefit and contribute to significant reduction in carbon emissions. The forthcoming Environment Bill is expected to reinforce this trajectory.

Legal challenge to both transport policy and major infrastructure projects has also gathered momentum in recent years, epitomised in the February 2020 Court of Appeal ruling regarding Heathrow's third runway. In this case the court of appeal ruled that ministers did not adequately take into account the government's commitments to tackle the climate crisis. More specifically that at the time that the UK commitment to the Paris Agreement was put into law, the Transport Minister should have instructed the Department for Transport to review the national policy statement on aviation to ensure that it remained a 'legal' policy statement in the context of the UK revised commitments with respect to carbon.

The approach to assessing major transport schemes in TAG is still catching up with policy. It remains possible for schemes to fully meet current assessment criteria and yet fall short of the high standards set by policy. TAG Unit A3 (Environmental Impacts) predominantly dates back to 2015 (although Air Quality sections were updated in 2019) and is not explicitly aligned with the policy of 100% reduction in GHG emissions by 2050, although there is a "strong preference" for Net Gain in regard to biodiversity. The latest DMRB guidance on climate change (LA 114) is from October 2019 and does reference the Net Zero target and take account of current climate change scenarios (UKCP18).

Since they pre-date these policy and guidance updates, and the latest UKCP18 climate scenarios, unfortunately all the SWTP documents would now fall short of current ambition in these areas. Whilst issues around Air Quality and Noise are rightly identified, there is insufficient assessment of carbon and climate impacts compared to current requirements (although the assessment was valid at the time). These points are not intending to indicate that there was any deficiency in the work undertaken, merely that more recent policy and guidance would mean that these issues should be considered again if the existing work is taken forward.

Taking this into account and given the policy changes it is likely that the Climate Emergency, Net Zero and Net Gain would now be strategic objectives against which options for SWTP (and indeed any highway / transport infrastructure scheme) would need to be assessed and progressed, likely leading to different solutions to those chosen to date.

6 Summary and conclusions

6.1 Preamble

This report provides the findings of the peer review work that has been undertaken on the governance and technical documents used to develop the South Wye Transport Package.

The aims of the peer review are to:

- Establish whether the package has been developed in accordance with the major transport scheme process as laid out in TAG
- Establish whether the package including their major road scheme components (the southern link road in the SWTP) are based on a sound evidence base
- Clarify whether the decisions to progress these packages were sound and justified in line with the recommendations of the technical work.

The comments and recommendations made regarding each document is summarised in terms of:

- Looking backwards – issues identified which should be clarified or amended.
- Looking to the future – generally technical issues related to transport modelling and appraisal which may need to be revisited if the package are progressed further in the future. This point also considers environmental, climate change and net zero issues which could lead to a different vision for the package.

The format of the review provides a concise commentary on the document provided, notes any issues identified by the review team and concludes with a summary of each document.

The review also considered responses by the Herefordshire Council team and technical team made to queries raised by the review team.

6.2 Documents reviewed

It is clear that a large volume of information has been produced to support the development of the package. Following an initial rapid review of all supplied documents, the peer review focussed upon the following:

- SWTP Preferred Option Report (3512983A-HHR Version 6.0, November 2014)
- SWTP Southern Link Road Planning Statement (3512983L-HHR Final, April 2015)
- Hereford Transport Model Local Model Validation Report (70029880-5711\1\3 3rd Draft, September 2017)
- SWTP Options Assessment Report (3512983BP Revision 10, October 2018)
- SWTP Options Refinement Report (70089880 Revision 6, February 2019)
- SWTP Economic Appraisal Report (3512983BP–WSP-DEV-001-EAR03 Rev 2, February 2019)
- SWTP Economic Case (no report reference, May 2019) (part of draft Full Business Case)
- SWTP Traffic Forecasting Report (3512983BP-WSP-DEV-001-TFR02 Rev 1, December 2018).

6.3 Classification of review comments

The comments made have been classified in terms of:

- Looking backwards – issues identified which should be clarified or amended. Categorized **red** where the point made is deemed to be a significant issue, **green** if the premise is sound however things could have been covered differently (i.e. a technical recommendation which could be reconsidered).
- Looking to the future – generally technical issues which could be revisited if the packages are progressed further, as well as environmental, climate change and net zero issues which could lead to a different vision for the package. These points are all categorised as **amber**, on the premise that they would be considered in the future before the package was progressed further.

6.4 Peer review conclusions

A volume of technical work has been reviewed to assess the case for the package. The findings are summarised below.

Document	Conclusion as to whether the document meets the peer review aims
SWTP Preferred Option Report	Conclusion: The level of information provided does not meet the requirements of Stage 1 of TAP. The preferred option report considers alternative link road alignments but this does not constitute an appropriate study of alternative interventions or the impact of doing nothing. Sustainable transport proposals are considered in an Appraisal Summary Table (AST) in Appendix B but are not really covered in the main body of the report. This document has in effect been superseded by the 2018 Options Appraisal Report, which has been developed in line with Stage 1 of TAP. Hence whilst it may have had deficiencies in the context of TAP, the significance is minor given the OAR looks at options.
SWTP Southern Link Road planning statement	Given this is a planning rather than a transport document, this has purely been considered and included within the reviewed suite of documents to provide context for the package.
Hereford Transport Model Local Model Validation Report	<p>Although the LMVR is a comprehensive document, with the information providing a clear understanding of the model and its validation results, a number of queries were raised in the rapid peer review of the document. It is important to note that the LMVR was in the process of being reviewed with the DfT as part of the submission of the SWTP Full Business Case.</p> <p>The direction from HC was that a detailed technical validation of modelling was not being sought from the peer review. The assessment of the modelling was in the context of it being in general appropriate for the stage of the project and supporting the conclusions reached.</p> <p>The work is considered to be appropriate for the work to date and the technical queries raised are points which may need to be considered again if the packages are progressed in the future.</p>
SWTP Options Assessment Report	A number of areas within the OAR could have been done differently to more robustly meet the steps of Stage 1 of the Transport Appraisal process. However, in light of the DfT email of 16/04/19 confirming no further comments on version 11 of the report, it can be concluded that Herefordshire Council have developed the package in an agreed manner and the peer review team's concern should be classed as something which could have been done differently rather than a fundamental issue. Although developed in accordance with guidance at the time environmental topics would now fall short of current Net Gain, Net Zero requirements and the Climate Emergency context and would need revisiting as part of any future updates
SWTP Options Refinement Report	The ORR provides a proportionate assessment of the active modes options and a robust assessment of the SLR. The DfT email of 16/04/19 confirming no further comments on version 6 the report provides further weight to the conclusion that Herefordshire Council have developed the package in an agreed manner.

Document	Conclusion as to whether the document meets the peer review aims
SWTP Economic Appraisal Report	A series of comments have been made in respect of the EAR and draft Economic Case. These are points of clarification which should be considered further by the scheme promoters and technical team in the future if the package is progressed further. This in no way implies the work done is incorrect, it merely is intended to provide a 'critical friend' approach to what may need to be inspected again in the future.
SWTP Economic Case	
SWTP Traffic Forecasting Report	A series of comments have been made in respect of the TFR. These are points of clarification which should be considered further by the scheme promoters and technical team in the future if the package is progressed further. This in no way implies the work done is incorrect, it merely is intended to provide a 'critical friend' approach to what may need to be inspected again in the future.

Notes:

- Aim 1 In accordance with TAG
- Aim 2 Sound evidence base
- Aim 3 Decisions sound
- Red = looking backwards – issue which should be clarified,
- Green = looking backwards – sound but issue could have been done differently.
- Amber = looking forwards = issue to be considered if package progressed further in the future
- Black = not applicable

Aim 1 of the review is considered to be met. Whilst there remain points of technical detail which may need to be addressed in the future if the package is taken forward, it is clear that the technical work undertaken since 2018 has been prepared in accordance with the DfT Transport Appraisal Process.

Aim 2 of the review, which is to establish whether the packages including their major road scheme components (the southern link road in the SWTP) have been developed with a sound evidence base is deemed to be met. The history of the package revolves around the infrastructure needs to meet the plans of the Core Strategy. It is evident that the infrastructure is required to support the development policies contained within this document. The proposals in the form of the HTP and the SWTP have been tested and challenged in an appropriate way through technical studies, modelling and Examination in Public, to enable them to be adopted within the Local Plan.

To further support the conclusion that the first two aims have been met, Herefordshire Council has also provided evidence that DfT has considered the OAR and ORR and confirmed that they had no further comments on these documents following review. These are two of the more critical documents to inform the case for the package and describe how its appraisal has been progressed.

6.5 Governance and historical development of the package

Whilst a detailed inspection of the fine print of the governance decisions would need to be undertaken by a land use or legal expert rather than the transport professionals who have undertaken the peer review, from the information considered in these documents it does appear that all decisions have been made in accordance with the recommendations of the technical evidence provided to support the Council papers at the time, i.e. the action taken was appropriate in the context of the advice and recommendations provided and the technical information available. There is a logical flow of decisions which recommend the continuation of the package, including where decisions have been called in for further scrutiny and additional information has been provided to justify the associated course of action.

One aspect which is not explicit within any of the decisions is the point at which the schemes split from a single bypass road scheme to two packages which included additional measures and a split of the two road elements. Whilst this is not considered to be a particular flaw in either

package, it would be helpful to record this in future scheme timelines if the package is progressed further.

In addition to the council's governance the proposals have been tested and challenged in an appropriate way through technical studies and Examination in Public, to enable them to be adopted within the Local Plan. Since the adoption of the Core Strategy, more recent technical work has been subject to regular public consultation and council scrutiny and there is nothing to indicate that decisions have not been undertaken in accordance with the technical evidence and recommendations which were available at decision points.

Aim 3 of the review is considered to be met.

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A. Incoming document register

The following is a cohesive list of all the documents that have been reviewed throughout the peer review process:

Initial technical documents:

- July 2011 - Local Development Framework
- March 2013 - Draft Core Strategy
- November 2014 - SWTP Additional Route Options (PB)
- November 2014 - SWTP Preferred Option Report Final Low RES (PB)
- November 2014 - SWTP Public Consultation Report (PB)
- November 2014 - SWTP Route Options
- July 2016 – Planning Permission Decision Notice 275986
- March 2017 - SWTP Active Travel Consultation Report (WSP PB)
- February 2019 – SWTP Option Refinement Report (WSP)
- Pro forma (SWTP)
- 2003 Multi Modal Report

Additional technical documents

- Hereford Transport Demand Model Validation Report
- SWTP Benefits Realisation Plan
- SWTP Commercial Case
- SWTP Commercial Case Appendix C1 Procurement Strategy
- SWTP Commercial Case Appendix C2 Decision on SLR Procurement
- SWTP Commercial Case Appendix C3 Risk Register
- SWTP Commercial Case Appendix C4 Programme
- SWTP Economic Appraisal Report
- SWTP Economic Case
- SWTP Financial Case
- SWTP Financial Case Appendix F1 Southern Link Road Cost Sheet
- SWTP Financial Case Appendix F2 Risk Register
- SWTP Financial Case Appendix F3 Project Risk Management Quantitative Cost Risk Analysis
- SWTP Financial Case Appendix F4 Active Travel Measures Cost Estimates
- SWTP Traffic Forecasting Report
- SWTP Option Assessment Report
- SWTP Option Assessment Report Appendices
- SWTP Southern Link Road Planning Statement
- SWTP Southern Link Road Planning Statement Fig 2.2
- SWTP Southern Link Road Planning Statement Fig 2.3
- SWTP Schedule of supporting documents

- SWTP Strategic Outline Case Proforma
- Hereford Transport Model Local Model Validation Report
- Appendix 2 VARIATION TO MEMORANDUM OF UNDERSTANDING (NOVEMBER 2014)
- Letter: HEREFORDSHIRE LOCAL DEVELOPMENT FRAMEWORK TRANSPORT MODELLING AND APPRAISAL
- Hereford Enterprise Zone Local Development Order
- Statement of Common ground Between Herefordshire Council and Highways Agency

Governance decisions

- 16.09.2010 - Cabinet - Publication of Core Strategy Option paper
- 28.07.2011 - Cabinet - Economic Development Strategy LDF and LTP3
- 19.07.2013 - Council - Core Strategy Approval
- 18.12.2014 - GOSC - Call-In of Cabinet Decision on the SWTP 13 Nov 2014
- 02.12.2014 - GOSC - Response to Call-In of Cabinet Decision on the SWTP 13 Nov 2014
- 18.12.2014 - Cabinet - South Wye Transport Package Report following Call-In
- 16.10.2015 - Council - Adoption of Core Strategy
- 20.05.2016 - Council - Adoption of Local Transport Plan
- 14.12.2017 - Cabinet - SWTP Active Travel Measures Progression
- 08.03.2019 - Cabinet Member - SWTP Preferred ATM Package

B. Summary tracker of comments

Comment ID	Status	Issue Theme	Source report	Specific location (e.g. section,page,para)	Comment	Date	Raised by	Allocated to	Response	Date	Comment_update	Date	Closed date
SW1	Closed	Options sifting	SWTP Option Assessment Report	Section 4.2.9 and 7.2	TAP Step 6 Identifies "In general, cheaper and easier parking at a destination is associated with more driving, whereas parking restraint is associated with less driving" - however parking charges are discarded as an option in Table 19 prior to scoring	22/6/20	MM	WSP	Notwithstanding its potential merits as an intervention, para 7.2.2. outlines the reason for discarding, stating that 'a combination of revenue and capital expenditure are likely to form part of the wider strategy to address the problems in the South Wye area. However, the major transport scheme funding (which requires the submission of a Transport Business Case, and which the OAR forms a component part) is for capital expenditure. On that basis only capital expenditure options were considered further through the assessment process'	8/7/20	It is understood why this position has been taken and TAP paragraph 2.9.1 notes that "At the end of Step 5 ... An initial sift should ... be undertaken to identify any 'showstoppers' which are likely to prevent an option progressing at a subsequent stage in the process", however we do feel it would be remiss for the review team not to note a concern that there are options which could address in part some of the problems identified, which have been discounted without any further examination. Without this how can we be sure the right options have been taken forward?	8/7/20	8/7/20
SW2	Closed	Options sifting	SWTP Option Assessment Report	p101 / Table 21	TAP Step 7 There is only a short explanation as to how and why the remaining options have been combined into four preferred packages. This needs more explanation	22/6/20	MM	WSP	The rationale is set out (albeit briefly) in para 8.2.12: 'As illustrated in Table 21, several options were not considered to achieve the desired outcomes in isolation. Therefore, in line with best practice guidance, consideration was given to ways in which these options could be packaged together. The aim was to create a sensible number of distinct and feasible option packages for further development and assessment.' TAP does not give guidance on how this should be carried out.	8/7/20	Acknowledge TAP isn't explicit on this point. More explanation would aid clarity for the reader, but it would not be justified to revisit the OAR on the basis of this point alone.	8/7/20	8/7/20
SW3	Open	Options sifting	SWTP Option Assessment Report	Table 27	TAP Step 7-8 Only a single package has been taken forward. The outcome of the OAR process in Step 8 of TAP is to identify the better performing options (including a low-cost option) for progressing to Stage 2 of the appraisal process, which hasn't been shown to happen for SWTP	22/6/20	MM	WSP	<p>taken forward, 2 of them (online highway improvement and the junction capacity improvement options) did not perform well against the assessment areas. It goes on to say: 'The Option Assessment Framework also demonstrated that the Southern Link Road and Active Travel Measures would contribute to the delivery of the area package objectives, with each performing better against different assessment areas. It was therefore proposed that these options be combined to deliver a package (Southern Link Road + Active Travel Measures) which performs well across the majority of the assessment areas.' In essence the two better performing options were taken forward, but in combination, as the identified best means of achieving the range of objectives.</p> <p>Para 9.3.5 states that 'It was considered that the Online Highway Improvements or the Junction Capacity Improvement packages referred to in Table 23 had the potential to form a low cost solution to compare with the preferred package. These were two of the four options assessed using the Option Assessment Framework. However, the Option Assessment Framework demonstrated that these packages would not sufficiently contribute to the achievement of the area package objectives. Therefore, in accordance with Step 7, these weaker performing packages were not taken forward and a low cost alternative to the preferred package was not</p>	8/7/20	The concern with the approach taken to combine the strongest performing interventions, namely the SLR and active travel measures, at the end of Stage 1 is that it could appear that a preferred package has been settled at this point. It is fully acknowledged that this remaining option needs to be (and is) subject to further appraisal in Stage 2, however typically other options would remain and be subject to further appraisal in Stage 2	8/7/20	
SW4	Closed	Dependent development	SWTP Option Assessment Report	Paragraph 3.5.3	"...the previous modelling of the performance of key routes and junctions in Hereford forecasts an overall deterioration in the levels of service, providing a clear indication that the current highway network is unable to accommodate the level of growth anticipated by the Core Strategy". Despite this at no point is it suggested that a transport intervention should be implemented as a prerequisite of additional growth. HC to clarify future development relationship with infrastructure and whether all or some of the planned development must be considered to be dependent on some form of transport intervention	22/6/20	MM	WSP	Para 1.1.196 of the draft Strategic Case chapter states that 'Appendix 5 of the Core Strategy identifies that up to 3,250 dwellings can be delivered prior to the combination of the Southern Link Road and the river crossing section being completed. Should these infrastructure elements not be completed in a timely manner then housing delivery in Hereford may be held up or delayed.' Para 1.1.14 of the draft Management Case states that 'The SWTP is not reliant on the prior completion of other programmes or projects to enable it to proceed. Other relevant and complementary projects are described in the Strategic Case.'	8/7/20	Closed - clarified by comment and by clarifications in discussions with HC	8/7/20	8/7/20
SW5	Closed	Technical / future issue to address	SWTP Economic Appraisal Report	Table 13	Sectorised benefits shows substantial asymmetry, particularly, but far from exclusively, in relation to Hereford City South West (Sector 1). Also, in Table 13, when considering benefits by origin and destination the sector that realises the greatest benefit is actually Hereford City North East (sector 3) and not Sectors 1 and 2 as noted in paragraph 7.3.3.	22/6/20	MM						
SW6	Closed	Technical / future issue to address	SWTP Economic Appraisal Report	Table 24 / Table 14	Reliability benefits are very low compared to travel time benefits i.e. £0.6m vs £69m. We would have expected these to be several times greater or the travel time benefits to be much lower.	22/6/20	MM						
SW7	Closed	Technical / future issue to address	SWTP Economic Appraisal Report	Paragraph 3.8 / Table 25 / TEE	Output change in imperfectly competitive markets is mentioned (in paragraph 3.8) but doesn't seem to be included in the adjusted BCR. This would add £1.17m benefits (based on 10% of business benefits).	22/6/20	MM						
SW8	Closed	Technical / future issue to address	SWTP Economic Appraisal Report	Table 22	The sensitivity testing realises a sensible range of BCRs for the scheme (for low, core and high growth) but the split by purpose is inconsistent for Other and Business. For Other, the benefits for Core and Low are virtually the same. For Business, the high growth test results in fewer Business benefits than the Core.	22/6/20	MM						

SW24	Closed	Technical / future issue to address	SWTP Traffic Forecasting Report	Appendix K	The node delay plots show that the largest delay by far (several times larger than anywhere else) in any modelled period is in the interpeak and is in the centre of Hereford. This delay is present in all years for the DM scenario but is only present in 2020 and 2026 for the DS scenario. To some extent the removal of this delay could provide an explanation for the unusual pattern of interpeak (IP) benefits, although the same effect would also be expected to be seen in the 2032 benefits and it isn't. Further explanation of the impact of this delay on the IP forecasts is required, including the rationale for not addressing this very large delay in the DM models.	22/6/20	MM						
HTP&SW1	Closed	Technical / future issue to address	Hereford Transport Demand Model Validation Report	General comment	* Applies to HTP and SWTP * No detailed review of this document has taken place since WSP indicated in May 2020 that 'essentially, all items and queries had been responded to by correspondence with an agreement to produce a final version of the LMVR made in June 2019'. However, the DfT correspondence attached to the Note does not confirm that the DfT has reviewed and accepted the model, it merely confirms dialogue has taken place. This either requires further information to be provided or HC to confirm that this document does not require reviewing to close this out.	22/6/20	MM						

C. Detailed modelling comments

As part of the peer review a number of detailed comments have been made in respect of transport modelling and forecasting. They are not intended to imply a fundamental issue with the work, these are points which the review team feels may need to be reviewed by Herefordshire Council’s technical team / consultants if the package is progressed further in the future.

SWTP Economic Appraisal Report and Economic Case

The following comments are made (references to the EAR are in bold text):

- **Table 13** – Sectorised benefits shows substantial asymmetry, particularly, but far from exclusively, in relation to Hereford City South West (Sector 1). Also, in Table 13, when considering benefits by origin and destination the sector that realises the greatest benefit is actually Hereford City North East (sector 3) and not Sectors 1 and 2 as noted in paragraph 7.3.3.
- Reliability benefits are very low compared to travel time benefits i.e. £0.6m vs £69m.
- Output change in imperfectly competitive markets is mentioned (in paragraph 3.8) but doesn’t seem to be included in the adjusted BCR. This would add £1.17m benefits (based on 10% of business benefits).
- The sensitivity testing realises a sensible range of BCRs for the scheme (for low, core and high growth) but the split by purpose is inconsistent for Other and Business. For Other, the benefits for Core and Low are virtually the same. For Business, the high growth test results in fewer Business benefits than the Core.

Table 16 (shown below as Table 1.1) within the EAR provides the breakdown of travel time benefits, model year and time period. Additional columns have been added by Mott MacDonald to show percentages (in italics).

Table 1.1: Table 16 in EAR

Year	AM	IP	PM	Total	AM	IP	PM
2020	543	125	143	811	67%	15%	18%
2026	396	47	111	554	71%	8%	20%
2032	381	172	343	896	43%	19%	38%
2041	367	704	319	1390	26%	51%	23%
2051	402	616	317	1335	30%	46%	24%

Table 1.1 shows, that the Interpeak (IP) period is providing around half of the total travel time benefits from 2041 onwards, whereas in the earlier years it provides only a fraction of this amount. The IP travel time benefits in 2041 are fifteen times higher than they are in 2026. This pattern of benefits appears to be implausible and from looking at the inconsistent interpeak delay plots in the Traffic Forecasting Report (**Appendix K**), it seems likely to stem from a quirk/ problem in the modelling rather than being related to a genuine impact of the scheme. In particular, the step change in the IP benefits warrants further explanation.

There are some resulting queries from investigating the EAR:

- Why do the total travel time benefits reduce by over 30% between 2020 and 2026 before recovering in 2032?
- Why is there a step change in travel time benefit between 2032 and 2041 (i.e. a 55% increase)?
- In 2020 and 2026 why are there so few benefits in the PM peak when in the following years the AM and PM travel time benefits are broadly similar?

EAR Conclusion: Something doesn't look quite right in the modelling. On the face of it looks unusual. Further investigation recommended as part of any further development of the package to explain / clarify.

SWTP Traffic Forecasting Report (TFR)

The Traffic Forecasting Report models two different scenarios, one with the committed highway schemes, and one with the additional South Wye Transport Package measures.

- The Southern Link Road (SLR), connecting A49/ B4399 roundabout to A465
- Active travel measures.

The primary purpose of the highway model is to assess the environmental and economic benefits of the SWTP.

The modelled scenarios have included assumptions based on the opening of the SLR and combined with the bypass opening year. The transport packages have been separated, to allow the Hereford Transport Package to be assessed independently.

For the future modelled years, there eastbound flows are higher in the AM peak, with westbound flows higher in the PM peak. The interpeak flows are 25-45% higher eastbound and this difference reduces proportionally in the later years modelled, indicating that the flows are not entirely tidal.

The following points of detail have been identified within the document:

Need for Variable Demand Modelling (VDM)

Within section 3.2 there is possibly a moot point given that variable demand modelling has been applied for the SLR forecasting but when comparing the "need for VDM" tests outlined in section 3.2 against the results set out in the SWTP EAR it is clear that VDM does have a significant impact on user benefits.

Diadem Variable Demand Model (VDM)

The following quote from section 3.3.3 "*DIADEM can only be used to estimate the elasticity of home-based trips*" is incorrect. Presumably it is intended to state that VDM isn't applied to goods vehicle trips which are generally assumed to be fixed. In the SWTP modelling, demand segments 4, 5 and 6 represent non-home-based trips subject to VDM.

Within 3.3.10 it is noted that trip matrices for the SWTP model have been derived in Origin - Destination (OD) format rather than Production - Attraction (PA). This appears to be an oversight in the original development of the model as the use of PA matrices, particularly in forecasting for schemes of this type, would be a more typical approach. Applying VDM at OD level can lead to inconsistencies as the link is broken between outbound and return trips resulting in asymmetric changes to trip patterns.

In the report there is a section to say VDM isn't required but then it's been done. This is a point of consistency rather than deficiency.

VDM Conclusion: We would recommend an edit to the document is required rather than this is indicating any deficiency in development. In the report there is a section to say VDM isn't required but then it's been done - it's a point of consistency rather than deficiency.

Future year scenarios

In section 4.1.2 it is noted that the SLR future Design Year aligns with the Hereford Bypass design year. In the Hereford Transport Package (HTP) modelling the SLR Design Year is modelled as 2035, 15 years after scheme opening.

Future year scenarios conclusion: This is an observation only.

National trip end forecasts

The following quote is from section 4.3.5 “As the estimated number of new jobs in Herefordshire districts exceeds the growth in TEMPro, the number of jobs for the future year has been set equal to the base year (see bold numbers in table).” Further classification needs to be provided. It is also unclear which table this refers to as the adjacent table (Table 13) has no bold highlight and it is not obvious where the number of assumed jobs has been capped.

National trip end forecasts conclusion: Document edit recommended to clarify rather than being an issue with the modelling.

Growth in freight traffic

Table 14, growth rates for freight trips, look like factors that have been mistakenly formatted as percentages.

Committed highway schemes

In section 5.1.2 it is noted that 4 committed schemes have been included in the Do Minimum (DM) forecasts. Of these, only Hereford Northern Expansion isn't included from the 2020 opening year onwards. The Hereford Northern Expansion is due to open in 2022.

Committed highway schemes conclusion: Northern Expansion is not included in HTP Traffic Forecasting (Table 5, p17) but it is in SWTP Traffic Forecasting (Table 15, p23). Is it correct that this is not in both reference cases?

Traffic signals

Within section 5.2.5 it appears that a number of signalised junctions, including the A49 Ross Road and Belmont Asda junction have been optimised in the Do Something (DS) scenario only. The significance of the optimisation of these junctions in only the DS scenario is unclear but the impact of this change on the economic assessment of the scheme could be substantial. In this regard it would be helpful to know how dependent the reported scheme benefits are to the optimisation of these junctions. A simple test against a DS scenario in which the junctions are left the same as the DM would be helpful to understand this.

The risk in optimising junctions only in the DS scenario is that the signal timings in the DM Saturn model may also be sub-optimal, especially if they have been carried forward from the base year (even in the base year, junctions modelled in Saturn are unlikely to be fully optimised if the final calibrated approach flows are not entirely consistent with the input signal timings).

To maintain an even-handed approach, it may have been more appropriate to optimise all major signalised junctions independently in the DM and DS to account for general changes in traffic resulting from developments and general background growth in traffic. As a minimum, any junctions optimised in the DS should also have been optimised in the DM.

Active travel measures

Active travel measures coded in the DS should lead to disbenefits for cars/GVs in the highway appraisal. Section 5.2.8 needs classification on whether these disbenefits have been identified.

Future year trip ends and constraint to TEMPro

In section 6.2.9 there is a suggestion that fuel cost change and income growth factors have been applied to the National Trip End Model (NTEM) growth, but these adjustments are only applicable in a fixed matrix assignment. The DIADEM VDM model negates the need for these adjustments. This should be clarified.

In Table 16, Constraint to TEMPro, the growth factors are mistakenly formatted as percentages.

Generalised cost parameters

In section 6.6 the value of time for Other Goods Vehicle 1 (OGV1) and Other Goods Vehicle 2 (OGV2) is based on the driver's value of time and does not take account of the influence of owners on the routing of these vehicles. TAG Unit M3.1 para 2.8.8 indicates that consideration should be given to doubling this value.

Traffic using SLR

In section 8.2 a 12hr or 24hr flow for the SLR is not immediately apparent within the Traffic Forecasting Report (TFR) but based on the annualisation factors in the Economic Assessment Report (EAR), the 12hr (2-way) flow on Southern Link Road is only around 5,300 vehicles in 2020. This seems inconsistent with the level of benefit being claimed. This is clearly not a busy road, especially compared to the volumes carried by the A49 where over 45,000 vehicles per day crossed the A49 bridge in 2018 according to the DfT traffic counter.

Appendix I: Forecast Link Flows

The (A3 size) tabulations of traffic flows are very unwieldy and we would have expected to see a diagrammatic figure showing the flows on key links within the main body of the report. 12hr flows would also be helpful to allow greater understanding of the impact of the SLR scheme across the day.

Appendix K: Node Delay Plots

The node delay plots show that the largest delay by far (several times larger than anywhere else) in any modelled period is in the interpeak and is in the centre of Hereford. This delay is present in all years for the DM scenario but is only present in 2020 and 2026 for the DS scenario. To some extent the removal of this delay could provide an explanation for the unusual pattern of interpeak (IP) benefits, although the same effect would also be expected to be seen in the 2032 benefits and it isn't. Further explanation of the impact of this delay on the IP forecasts is required, including the rationale for not addressing this very large delay in the DM models.

Following the detailed review, some general issues need to be discussed and examined further. These are:

- Issues relating to the optimisation of key traffic signals in only the DS scenario need to be clarified. There is a clear risk that the approach adopted may have artificially inflated the user benefits that have been attributed to the scheme in the economic appraisal.
- Very large delays in the interpeak model should be investigated, particularly considering the unusual patterns of user benefit noted in the EAR for this time period.
- A diagram showing traffic flows on key links appears to be a significant omission from the forecasting report. The inclusion of select link analyses to show the routing of trips that are making use of the SLR scheme would also aid understanding of the impacts of the scheme.

